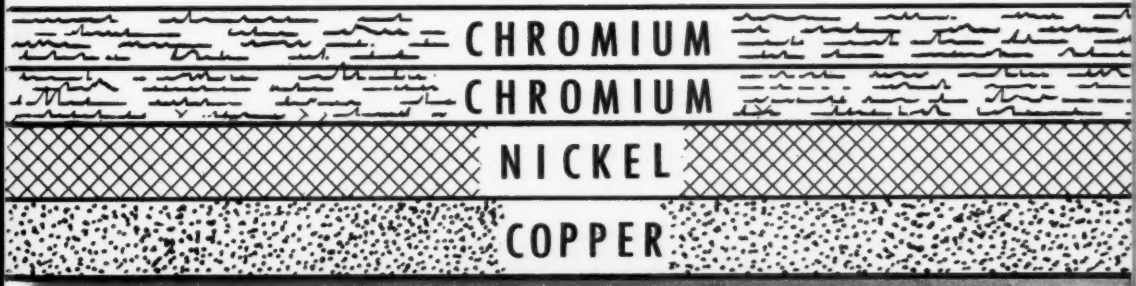
products finishing

JULY
1959

Double Chromium--- Solution to Corrosion Problems?

. . . . . Page 64



Water-Soluble-Resin Paints Page 24
Which Auto Trim Finish? Page 30
A. E. S. Convention Report Page 82
New Developments Page 92
Table of Contents Page 5

finishes on metal products

A Modern Plating Specialty Representative

. . . WITH A PIONEER SPIRIT

Here is the composite man hundreds of platers everywhere trust with their most important plating problems. He is your ROHCO® Representative.

He can tell you how to get top quality in zinc and cadmium plating at minimum cost—solve your rinsing or staining problems—provide the right products to help you everywhere in the plating line. And he takes unusual pride in going "all the way" in customer service and helpfulness.

Behind these men is a progressive supplier of Plating Specialties whose entire organization places personal attention, prompt services and follow-up—highest on the product list.

It will be a rewarding experience to get well acquainted with your ROHCO representative. He is anxious to know you better . . . and help you!

----Nationwide Stockpoints----

R. O. HULL & COMPANY INC.

1304 Parsons Court • Rocky River 16, Ohio

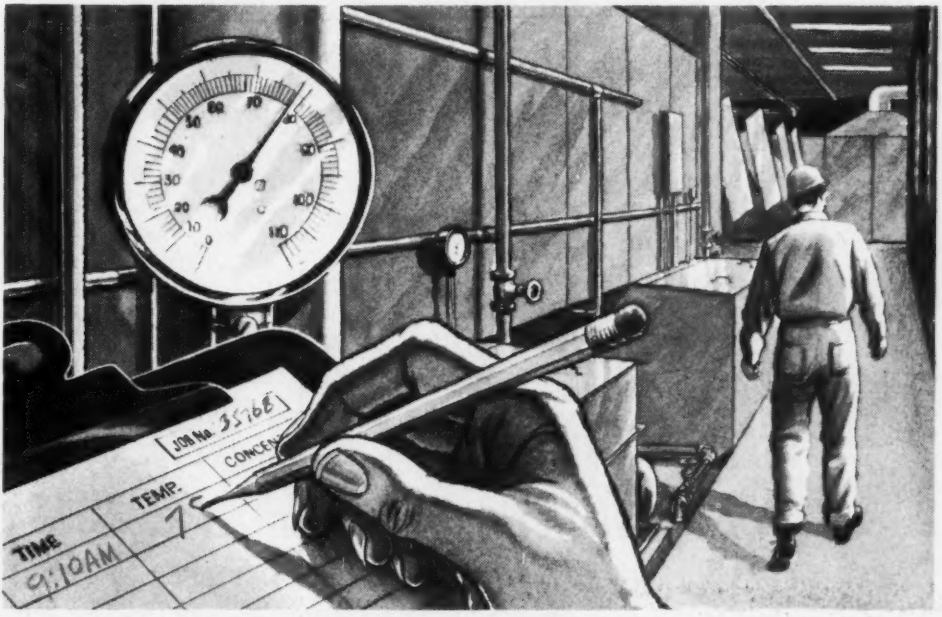
The RIGHT START . . . a BETTER FINISH

For more data circle 301 on Postpaid Card

To get the most economical spray washing

ask Oakite

OVER 50 YEARS CLEANING EXPERIENCE • OVER 250 SERVICE MEN • OVER 160 MATERIALS



Oakite ROOM-TEMP cleaner cuts solution heating costs

That's right! Oakite Room-Temp cleaner gives good cleaning results at 70° to 100°F.—the temperature range you find in most industrial cleaning areas. This cleaning efficiency can save you money on steam normally required for heating of cleaning solutions.

Designed primarily for spray-wash machines, Room-Temp cleaner is non-foaming ... good for steel, iron, brass, aluminum ... has no odor ... requires no ventilation.

Room-Temp cleaner provides top rust protection for in-process parts, too. It dries to a thin film that stops corrosion from attacking iron and steel for more than 300 hours at 90% humidity, 100°F.

ASK THE OAKITE MAN to tell you more ... or to help you choose from the complete Oakite line a spray-washing material that offers most economy for the parts you're processing. Or, write for application data sheet B-6972. Oakite Products, Inc., 20 Rector Street, New York 6, N. Y.

it PAYS to ask Oakite

OAKITE
50 1909-1959 SCIENCE
years leadership in industrial cleaning

For more data circle 304 on Postpaid Card

Get this valuable report on

The best ways to finish metal stampings

from your Norton Representative

Newest in the Norton series of reports to industry is *Barrel-Finishing of Metal Stampings*, prepared by Norton Abrasive Engineers.

Based on continual observation of finishing techniques in many plants, this report brings you plenty of worthwhile information on the advantages of barrel-finishing equipment and abrasives. Included are facts on types and sizes of stampings you can barrel-finish . and reports like the following.

Aircraft panel stampings, 12" square x 1/8" thick, perforated, were processed by placing 12 panels 1" apart, using steel rods with fiber bushings as spacers. This whole unit was placed in the barrel, where bonded, triangular-shaped ALUNDUM* TUMBLEX* *"T" chips successfully removed all burrs from the stampings' edges and perforations.*

Your Norton Representative can supply you with this report fast — will also provide literature on all TUMBLEX abrasive types: "A" (random-shaped chips), "T" (bonded triangles), "S" (bonded spheres), and "N" (natural stones), covering the widest range of finishing requirements. And samples of your work parts sent to our Sample Processing Department will be promptly barrel-finished and returned to you with complete facts as to abrasives, methods and equipment. NORTON COMPANY, General Offices, Worcester 6, Mass. Plants and distributors around the world.

*Trade-Marks Reg. U.S. Pat. Off and Foreign Countries

G-372

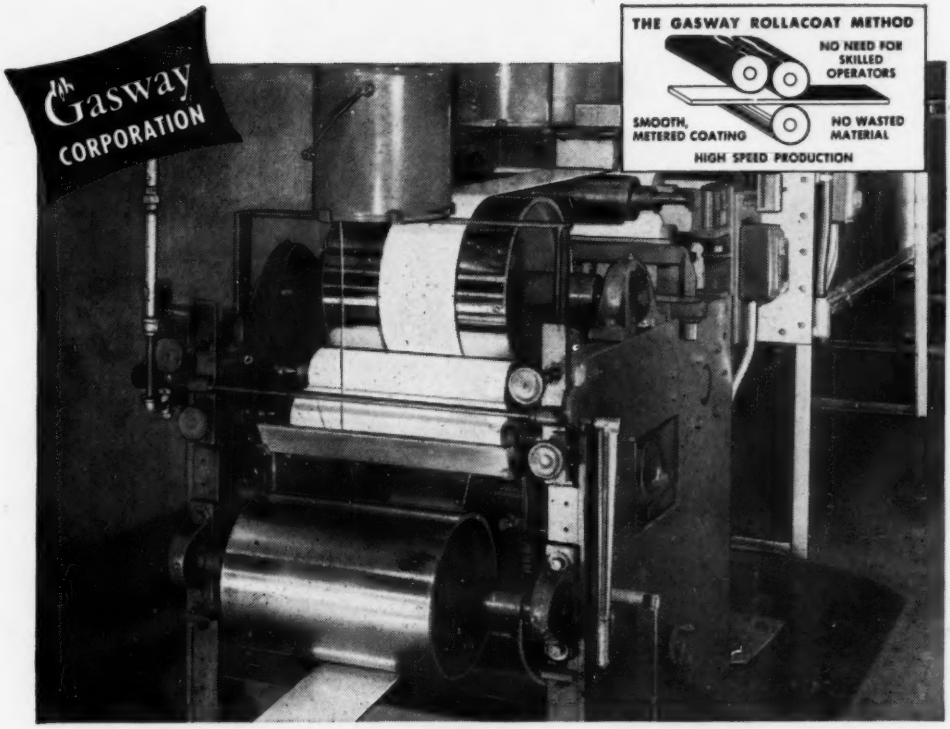
NORTON ABRASIVES

Making better products . . . to make your products better

NORTON PRODUCTS: Abrasives • Grinding Wheels • Grinding Machines • Refractories • Electro-Chemicals

BEHR-MANNING DIVISION: Coated Abrasives • Sharpening Stones • Pressure-Sensitive Tapes

For more data circle 305 on Postpaid Card



This manufacturer produces faster... saves 67% on paint ... gets more uniform finish ... with GASWAY ROLLACOATING

Here's how KoolVent Metal Awning Co. is controlling manufacturing costs and getting a better product, with its Gasway Continuous Strip Coating Line.

For example, KoolVent estimates that *paint consumption is approximately 33%* of what it was before the company installed its coating line. *850 square feet of aluminum is covered with one gallon of paint!* In addition to these savings, *KoolVent can and does coat an average of 8500 pounds of aluminum stock per 8 hour shift.* This is possible because the Gasway line produces 75 feet of enameled and baked strip per minute.

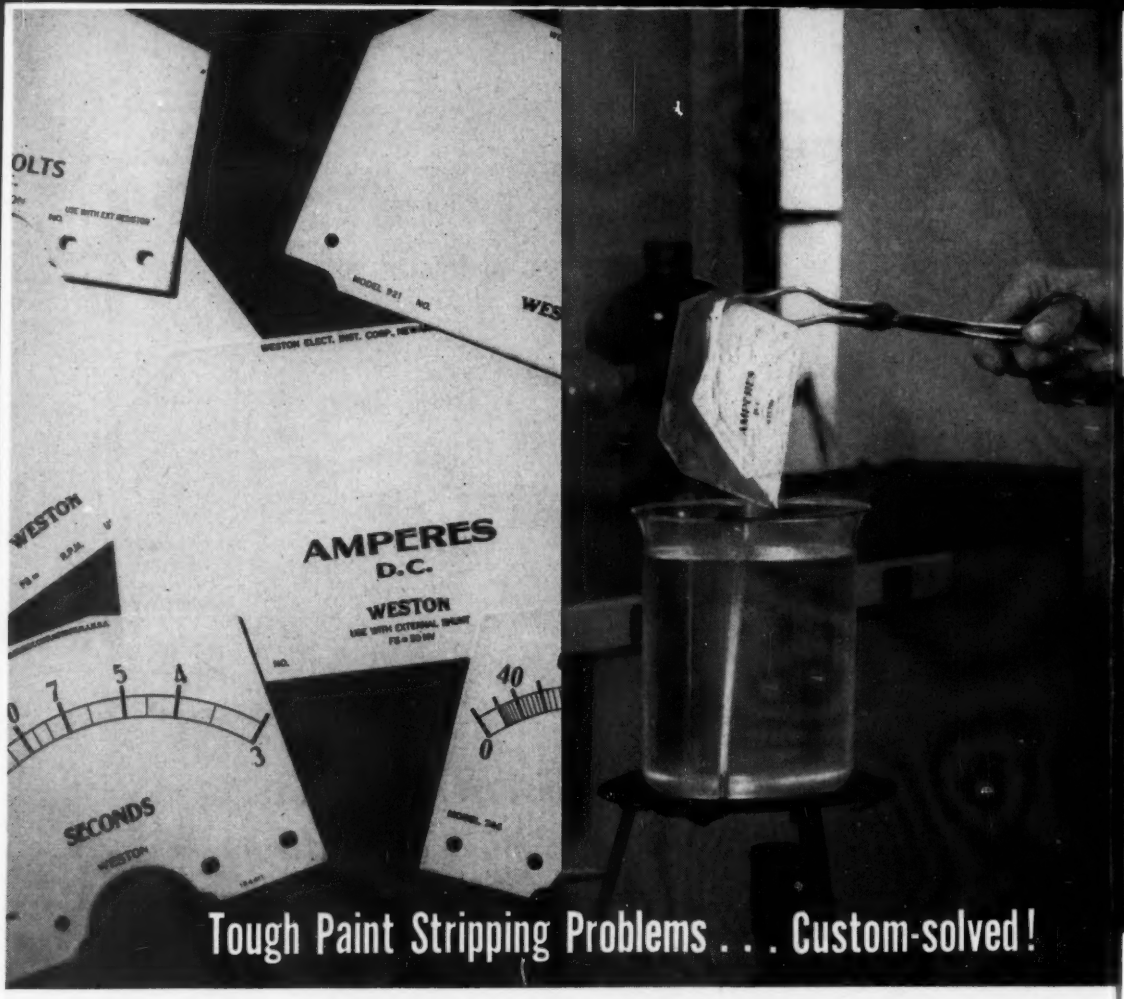
The manufacturing advantages don't stop with the painting either. KoolVent roll-forms its awning parts after coating. This is the last step in the manufacture of the parts. Assembly of the awning is the only thing left to do. The only handling done during manufacture is handling of coiled stock. The automation in finishing and forming operations increases efficiency, and also cuts costs significantly. *Get all the details today!*

INFORMATION AVAILABLE—Gasway will send you full details on rollacoating at no obligation. Whether you have tremendous production rates or intermittent manufacturing, there's a Gasway coater to handle the job. Send for the whole story.

Gasway CORPORATION
6459 North Ravenswood Ave.
Chicago 16, Illinois

LOOK TO GASWAY FOR EFFICIENT, HIGH PRODUCTION COATING OF STRIP, SHEET OR PANELS

For more data circle 306 on Postpaid Card



Problem: To remove two coats of specially formulated non-yellowing white baked synthetic enamel, printing, and clear baked enamel top-coat from these Weston Scale plates.

Enthone Stripper Q-561 (specifically developed for Weston Instrument Division of Daystrom, Inc.) breaks the bond between the coatings and the brass or nickel plated brass basis metal.

The many factors that affect paint stripping—type of paint, condition of the metal surface, presence or absence of conversion coatings, method of paint application, baking cycle—make every stripping job unique in itself. In most cases, only laboratory tests on your parts or test panels, and proper evaluation of all the factors involved, can produce the most economical and efficient stripper for your application. Only Enthonics can do this custom research and development job in depth. Write for brochure describing our paint stripping laboratory service. Enthone, Incorporated, 442 Elm Street, New Haven, Connecticut.

ASARCO

ANOTHER PRODUCT OF Enthonics RESEARCH

ENTHONE

A Subsidiary of American Smelting and Refining Company

For more data circle 307 on Postpaid Card

M. L. FORNEY, *Publisher*
RICHARD S. KLINE, *General Manager*
EZRA A. BLOUNT, *Editor*
GERARD H. POLL, JR., *Associate Editor*
H. LEROY BEAVER, DR. NELSON F. MURPHY — *Consulting and Contributing Editors*
NORMAN S. ROGERS, *Art Editor*
K. M. GETTELMAN, *Circulation Manager*

products finishing

Vol. 23 No. 10 July, 1959

FEATURES IN THIS ISSUE:

COMPETITIVE AUTOMOTIVE TRIM FINISHES AND MATERIALS TODAY • *Editorial*

GLOSSY TOPCOATS FROM WATER PAINTS • *By Robert A. Boller*

SILK SCREENING SAVES TIME IN MARKING DIALS AND NAMEPLATES

EXTERIOR AUTOMOTIVE TRIM: CHROMIUM PLATE, STAINLESS OR ALUMINUM? • *By Myron B. Diggin, R. V. Vanden Berg, and V. J. Snodgrass*

SPEEDIER PAINTING AT NATIONAL GRILLE

DUPLEX CHROMIUM: THICKER, MORE CORROSION-RESISTANT CHROMIUM PLATE • *By Dr. Edgar J. Seyb, Jr.*

NOTES AND QUOTES FROM THE A. E. S. CONVENTION AND INDUSTRIAL FINISHING EXPOSITION

6 ADVERTISING REPRESENTATIVES

DEPARTMENTS:

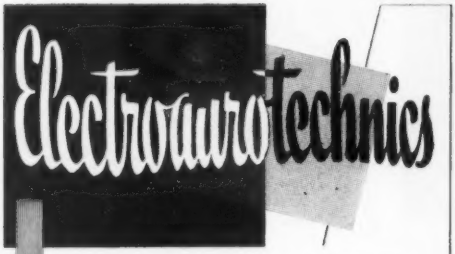
29 METALS MEMOS
92 NEW EQUIPMENT, MATERIALS, PROCESSES
129 PRODUCT LITERATURE
137 CLASSIFIED ADVERTISING: POSITIONS AVAILABLE; USED MACHINERY; PROFESSIONAL CARDS; SERVICES
138 FINISHING CLINIC
140 NEWS OF THE FINISHING INDUSTRY
157 MEETINGS OF INTEREST TO FINISHERS
158 THE FINISHING TOUCH
160 JULY ADVERTISERS' INDEX

Member
BPA
Metal Finishing Suppliers Assn. Inc.

contents

Published monthly with two issues in March and copyrighted (1959) by Gardner Publications, Inc., 431 Main St., Cincinnati, Ohio. Printed in U.S.A.

For more data on advertisement on opposite page, circle 307 on Postpaid Card



A big word, but to us at Technic an important one, for our more than 50 years combined experience in the field of Precious Metal Plating Metallurgy is continually being used to improve and develop new soluble golds, and application procedures for the electro deposition of gold and gold alloys to meet the ever changing technological requirements of today and tomorrow.

We are justly proud of our reputation for solving tough problems, and for the millions of dollars saved by the adoption of our Electroaurotechnics and superior soluble golds, among which are:

Industrial 24Kt Gold

(aqueous) the world's purest soluble gold, specified and used by many leaders in the Missile, Atomic and Electronic fields.

OROSENE 999

24Kt Acid Bright Gold

Patent Pending

The first NEW development in gold electroplating in over 100 years. It produces electroplates both hard and ductile using ONLY ONE addition agent operating at room temperature under POSITIVE and simple control.

H.G. Bright 23+Kt Gold

The only bright gold operating with less than 1/10 ounce free cyanide per gallon at room temperature, offering variable hardness to fit your specifications . . . at a non-premium price.

Also our

Rhodium Sulphate T.P.

A superior rhodium concentrate of high purity offering low stress deposits and tight grain structure.

Full information on these superior soluble metals is available upon request . . . also the complete resources of our laboratories, and the most experienced Precious Metal Plating metallurgists in the world are at your service, without obligation. Phone, TWX, wire or write.

Technic Inc.

39 SNOW ST... PROVIDENCE, 1 R. I.
JAckson 1-4200
Chicago Office: 7001 North Clark Street

For more data circle 308 on Postpaid Card

products finishing

advertising representatives

Duncan W. Barton, 342 Madison Ave., New York 17, N. Y., Murray Hill 7-7390. Eastern Pennsylvania. central New York State, New Jersey, Maryland, Delaware, Washington, D. C., Long Island, Brooklyn, New York City, Staten Island.

Granville M. Fillmore, *Vice President,* 342 Madison Ave., New York 17, N. Y., Murray Hill 7-7390. Eastern New York State, Connecticut, Massachusetts, Rhode Island, Vermont, New Hampshire, Maine.

George E. Hay, 431 Main Street, Cincinnati 2, Ohio, CHerry 1-5924. Western Pennsylvania, western New York, Ohio, Kentucky, southern Indiana.

John M. Krings, *Vice President,* Room 211-A, 540 N. Michigan Ave., Chicago 11, Ill, DElaware 7-5441. Western Michigan, Illinois, Wisconsin, Iowa, Minnesota, the Dakotas, northern Indiana.

Jeryl L. Marlatt, 1051 Brooklawn Rd., Birmingham, Michigan, MIdwest 6-5935. Eastern Michigan, northwestern Ohio.

Norman S. Rogers, 431 Main Street, Cincinnati 2, Ohio, CHerry 1-5924. Central Indiana.

Gene J. Schwarber, *Advertising Manager,* 431 Main Street, Cincinnati 2 ,Ohio, CHerry 1-5924. Missouri, Kansas.

The Robert W. Walker Company, 730 S. Western Ave., Los Angeles 5, Calif., DUnkirk 7-4388; 57 Post St., San Francisco 4, Calif., SUtter 1-5568. California, Oregon, Washington.

★ ★ ★

Circulation over 21,500— largest in the finishing field

Hammond

AUTOMATICS *cut*

GRINDING · POLISHING · BUFFING · DEBURRING · *costs*

Your finishing problems can be solved by the proper application of Hammond Automatic or Semi-Automatic equipment. Standard heads, turrets and conveyors are used wherever possible to keep costs down. Special machines are designed for the unusual job.

SEND SAMPLES FOR COMPLETE ENGINEERING REPORT.

Hammond OF KALAMAZOO "Good Machinery Since '83"

Hammond Machinery Builders INC.

1622 DOUGLAS AVE. • KALAMAZOO, MICH.

For more data circle 309 on Postpaid Card

WHATEVER FORM OR SIZE YOU NEED

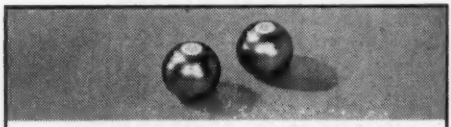
there are "Plus-4"® (Phosphorized Copper) Anodes to help you cut the costs of acid-copper electroplating—at the same price as ETP copper anodes

"Plus-4" Anodes in commercial use in practically all types of acid-copper electroplating have proved their advantages over wrought or cast electrolytic tough pitch copper anodes. The four advantages indicated by the name are:

+ 1 **No anode sludge (no "bagging" or diaphragms required).**
+ 2 **No copper build-up in the solution.**
+ 3 **Smooth, heavy cathode deposits.**
+ 4 **Up to 15% more cathode deposit.**

THE REASON for the elimination of sludge formation is that an anode of phosphorized copper develops an adherent dark brown film during electrolysis, which prevents the formation of free copper particles, but which in no way interferes with the plating operation or increases the electrical resistance of the bath. The phosphorized copper anode also corrodes more evenly, depositing more copper per pound on the cathode; gives a smooth, heavy deposit free from roughness due to lodgment of copper sludge particles, and leaves a small, compact "fish." There is no copper sludge or build-up of copper sulfate in the electrolyte.

WRITE FOR INFORMATION on how you can obtain a test quantity to supply one tank. Address: The American Brass Company, Waterbury 20, Conn. In Canada: Anaconda American Brass Ltd., New Toronto, Ont. 59105



FORGED BALL ANODES

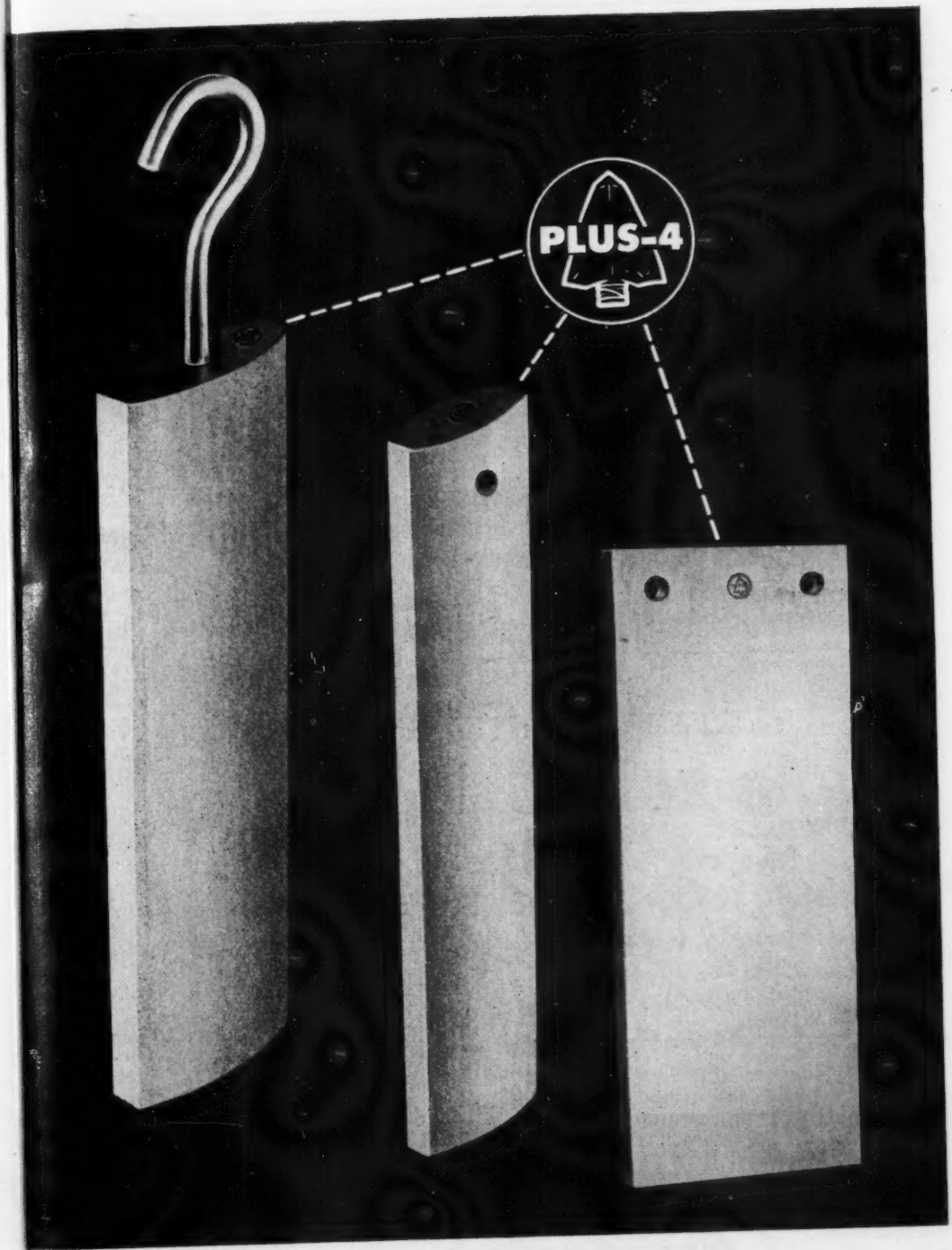
Anaconda ETP Copper Ball Anodes, used widely in cyanide plating, are cold forged from wrought metal. The result is a homogeneous, fine-grain structure, free from voids. Consequently they corrode very uniformly without disintegration. The balls are 2" diameter and weigh 1¼ pounds each. Identify them by the spearhead trademark.

ANACONDA®

"PLUS-4" ANODES Phosphorized Copper

MADE BY THE AMERICAN BRASS COMPANY

For more data circle 310 on Postpaid Card


PLUS-4

for defect-free die-cast plate . . .

Use Kelite **SUPERSOLV*** *as the Soak Cleaner prior to electrocleaning*

- *What* **SUPERSOLV** *is . . .*

SUPERSOLV is a non-etch, non-passivating alkaline soak cleaner for zinc-base die-cast parts.

- *What* **SUPERSOLV** *does . . .*

Used at a concentration of 5 oz./gal. at 160° to 170°F., SUPERSOLV removes mineral oils, buffing compositions and shop soils in a 1 to 2-minute soak cycle without sensitizing or staining the parts, or making them subject to roughness after electrocleaning and acid dip. The result is defect-free plate of improved brightness and lustre.

A Typical Zinc-Base Die-Cast Cleaning Cycle Using SUPERSOLV

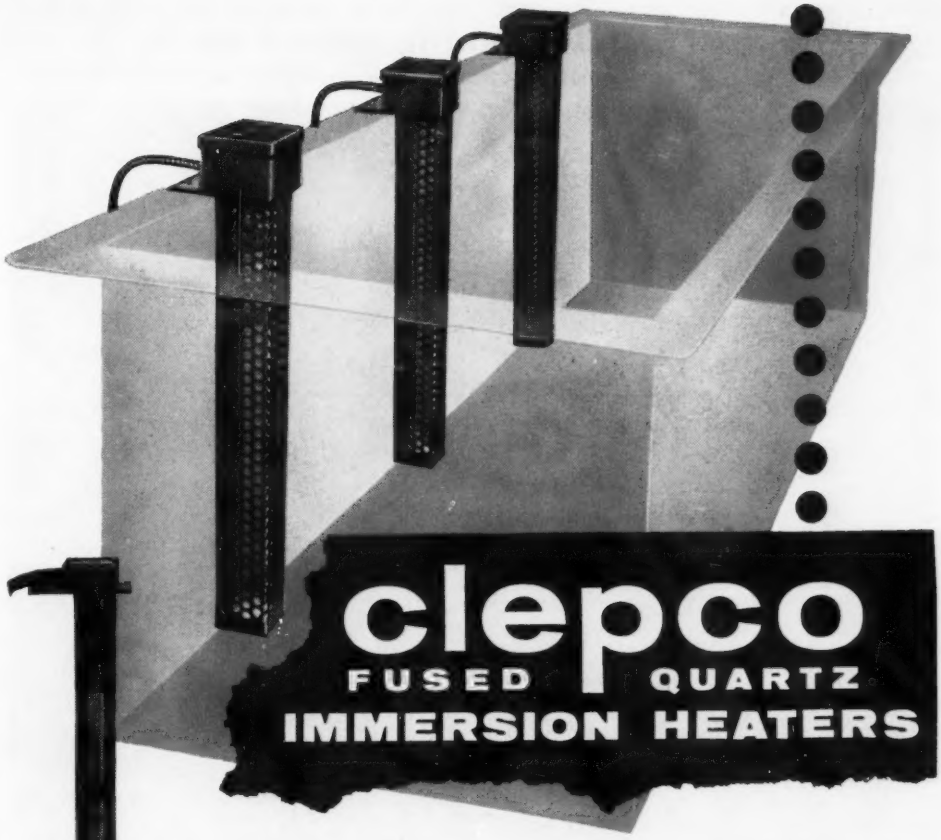
Stage	Operation	Material	Concentration	Temperature	Time
1	Emulsion soak	Kelite Ke-Sonic-C®	1 to 500 Water	200° F.	5 min.
2	Spray rinse	Water	.....	140°F.	2 min.
3	Alkaline soak	Kelite Supersolv	5 oz./gal.	165° F.	2 min.
4	Spray clean	Kelite MD-1-S	¼ oz./gal.	140°F.	1 min.
5	Anodic alkali clean**	Kelite No. 41	5 oz./gal.	160° F.	2 min.
6	Rinse	Water	.....	Ambient	1 min.
7	Acid dip	Kelite Process Z	2 oz./gal.	Ambient	30 sec.
8 & 9	Rinse	Water	.....	Ambient	1 min.

* Patented, U.S. Patent Office ** 6 to 7 volts, 15 - 25 ASF

KELITE CORPORATION

• Los Angeles 12 • Chicago 45 • Berkeley Heights, N. J.

For more data circle 311 on Postpaid Card



FAMOUS THROUGHOUT THE PLATING INDUSTRY

For Quality, Efficiency, Low Cost Operations

OVER 100,000 INSTALLATIONS

For alkaline or acid heating jobs, you can depend on
CLEPCO ELECTRIC IMMERSION HEATERS

CLEPCO STEEL and STAINLESS HEATERS
will meet all your specific needs.

Low Heat Density — Long Life — Vapor-proof junction Box.

See Your Plating Supply House.

SEND FOR COMPLETE INFORMATION

THE CLEVELAND PROCESS CORP.

1965 EAST 57TH STREET • CLEVELAND 3, OHIO

For more data circle 312 on Postpaid Card

DOW

metal cleaning report no. 2

case histories from your Distributor of Dow Solvents

Flo-ball rocket valves are cleaned ultra-fine with Chlorothene. Fire hazards and toxicity problems are virtually nonexistent.

CHLOROTHENE MAKES ROCKET VALVES READY FOR ORBIT

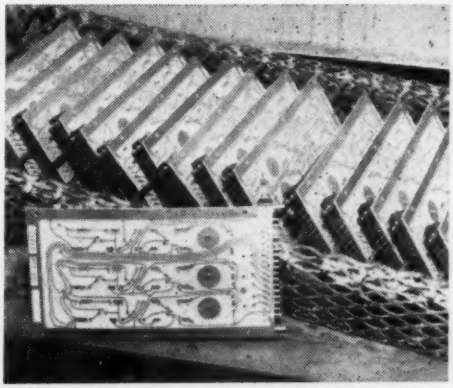
Livingston, New Jersey—An Eastern concern in the business of manufacturing "flo-ball" valves for rockets was faced with a metal cleaning problem. They used an ultrasonic bath to remove grease and other contaminants. Problem: Toxicity and fire hazard. Distributor's answer: Chlorothene® (Dow 1,1,1-trichloroethane, inhibited). Chlorothene did the ultra-fine cleaning job demanded. But, most important, the low toxicity rating of Chlorothene plus the fact that this versatile solvent has no fire or flash point solved the fire hazard and handling problems at the same time! Happy result: Renewed long term valve contract for the New Jersey firm.

CIRCUITOUS ROUTE TO CLEAN CIRCUITS

St. Paul, Minnesota—Electronics manufacturer had to clean rosin flux from electric circuits. Trichloroethylene in this vapor degreasing operation was too slow and expensive. They had previously tried ultrasonics, but that process took the finish off the circuits. The fast, economic answer: Chlorothene, Dow's safer, more effective cold cleaning solvent. Chlorothene speeded production, did not injure the finish, reduced cleaning costs 16%! Now they complete the circuit on time!

COKING PROBLEM ELIMINATED

Machine company tried a number of brands of trichloroethylene to clean small machine parts made of brass, steel and aluminum. With each brand tried they experienced serious coking problems in their vapor degreaser. Periodically it had to be shut down for two or three days while the coal-like residue was chiseled out. The Dow solvents distributor in the area suggested NEU-TRI®, Dow's superstable neutral type of trichloroethylene. NEU-TRI was tested for thirty days. At the end of that time, no coking deposits had appeared, and NEU-TRI has done the job ever since!



Time and time again, Dow solvents distributors help manufacturers improve cleaning and stripping operations. And for two good reasons: (1) Dow offers the widest line of chlorinated solvents for modern industry; (2) Dow backs its distributors to the hilt with technical information and on-the-job help. Dow solvents are made to high purity standards and each is designed to do a specific job and do it well. For help on your metal cleaning problems call on the nearby Dow solvents distributor.

THE DOW CHEMICAL COMPANY
MIDLAND, MICHIGAN

FREE . . .
TECHNICAL SERVICE
on 24-hour notice

Your distributor of Dow solvents will gladly help you with any problems you are experiencing with metal cleaning solvents. He can have a trained solvents specialist en route to your plant within 24 hours after your call is received!

CHLOROTHENE®
TRICHLOROETHYLENE
PERCHLOROETHYLENE
METHYLENE CHLORIDE

See Your Distributor of Dow Solvents First!

For more data circle 313 on Postpaid Card

Consider the case of Sorrowful Brown,
The saddest plater in the town.
Swamped with rejects by the score,
'Til **DARCO®** *made him smile once more.*

Red Label DARCO activated carbon keeps the plating bath clean and minimizes rejects. It's the only carbon made especially for plating solutions. Your nearby DARCO distributor can supply you promptly and show you how to use DARCO to advantage.

DARCO IS MADE BY

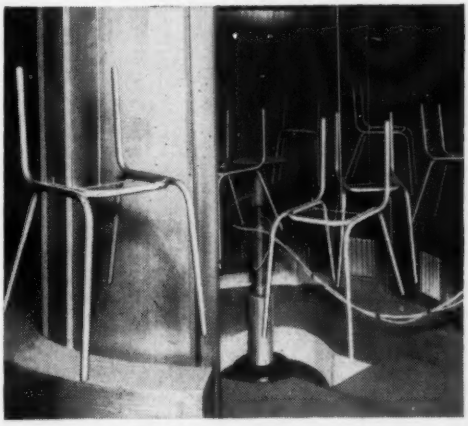
CHEMICALS DIVISION
ATLAS POWDER COMPANY
WILMINGTON 99, DELAWARE
In Canada: Atlas Powder Company, Canada, Ltd.
Brantford, Ontario, Canada

For more data circle 314 on Postpaid Card

RANSBURG *Electro-Spray*...

PROVIDES 50% PAINT SAVING

(over the former dip method) in the finishing of



KAY-MAR DINETTE FURNITURE

◀ A high quality, long-lasting finish is applied to tubular chair frames as they make a loop around the Ransburg No. 2 Process reciprocating disk in the finishing department at Kay-Mar Industries.

● Kay-Mar Industries, Cassopolis, Michigan, switched from the dip method to Ransburg Electrostatic Spray Painting because they wanted to improve the quality of the finish on their metal furniture line.

Now, with electrostatic spray painting, they get a heavier, more uniform application, which was not possible with former dip. With electrostatic, they are able to use metallic coatings with higher metal content. In their magazine advertising to the mobile home industry, they proudly say: "Finest finish in the industry at no additional cost to you!"

Electrostatic provides other advantages at Kay-Mar. They picked up some additional—and much needed—floor space when dip tanks were removed. Their insurance rates were reduced because of improved "housekeeping" conditions. Frequent color changes are made quickly and simply, and rejects—which used to run 1½%—are reduced to less than a quarter of one per cent.

No reason why you can't do it, too!

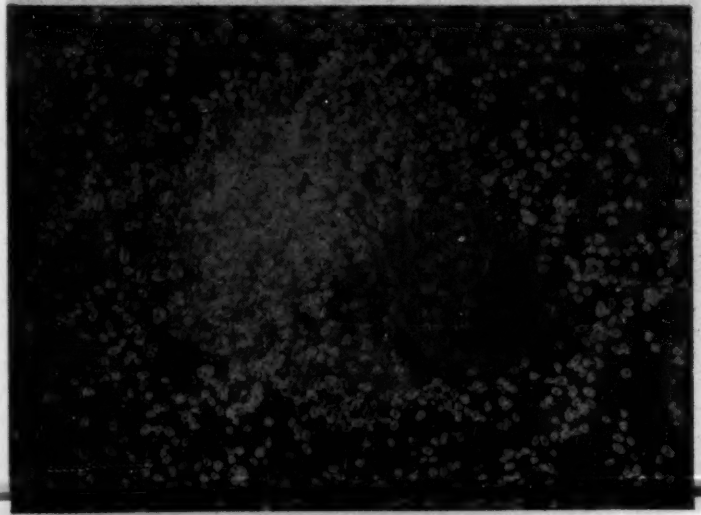
Let us test prove the advantages of automatic electrostatic spray painting on your products in our complete laboratories. No obligation. Call or write for our No. 2 Process brochure, which shows a variety of automatic painting installations on a wide variety of products. Or, if your production doesn't justify automatic painting, let us tell you about the new Ransburg No. 2 Process electrostatic hand gun, now widely used by both large and small manufacturers.

Call or write **RANSBURG Electro-Coating Corp.**

Box-23122, Indianapolis 23, Indiana

For more data circle 315 on Postpaid Card

HARSHAW NICKEL SULFATE CARRIES GUARANTEED SPECIFICATIONS



Harshaw, the world's foremost producer of high purity nickel sulfate, guarantees specifications from which you derive the following benefits:

1. Consistently high quality material, laboratory tested for use in dull, semi-bright, and bright nickel plating solutions.
2. Product uniformity from shipment to shipment on which you can depend.
3. Harshaw nickel sulfate is high in purity and contaminants will always be well below tolerable limits in your plating bath.

Additional bonus features of Harshaw Nickel Sulfate are . . . Free-flowing, small definite crystals of uniform size . . . Rapid, complete solubility.

detailed information upon receipt of your inquiry.

NICKEL SULFATE

THE HARSHAW CHEMICAL CO

solubility.

detailed information upon receipt of your inquiry.

NICKEL SULFATE

GUARANTEED SPECIFICATIONS

Nickel (Electrolytic Method)	22.0% Min.
Iron	.01% Max.
Copper	.001% Max.
Zinc	.015% Max.
Manganese	.005% Max.
H_2O Insolubles	.01% Max.
Calcium + Magnesium As Calcium	.20% Max.

THE HARSHAW CHEMICAL CO.

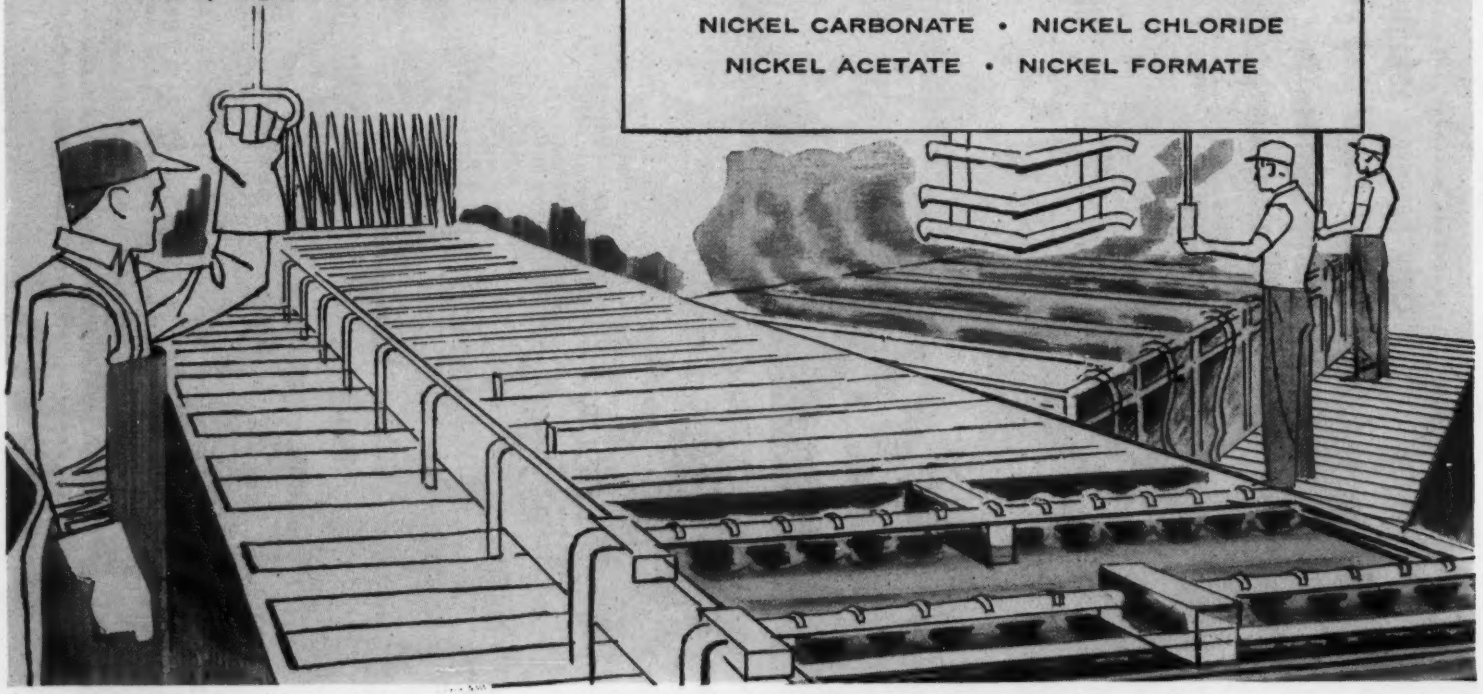
1945 East 97th Street • Cleveland 6, Ohio

Chicago • Cincinnati • Cleveland • Detroit • Houston • Los Angeles
Hastings-On-Hudson • Philadelphia • Pittsburgh

Other Harshaw Nickel Chemicals
Featuring Guaranteed Specifications

NICKEL CARBONATE • NICKEL CHLORIDE

NICKEL ACETATE • NICKEL FORMATE



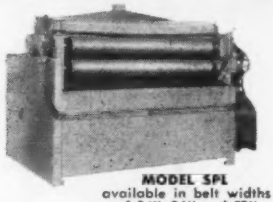
WRITE FOR FREE BOOKLET: HARSHAW'S COMPLETE SERVICE TO THE PLATING INDUSTRY

For more data circle 316 on Postpaid Card

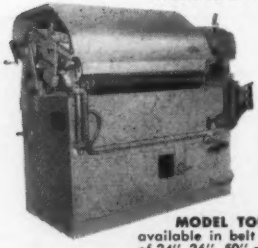
"Only machine capable of handling our rugged and precision sanding requirements on large aluminum panels"*

*Reported by
N. B. Barsha, Plant Engineer
Cupples Products Corp.
St. Louis, Mo.

TIMESAVER
SPEEDBELT
SANDERS



MODEL SPL
available in belt widths of 24", 36" and 50". Sanding action is for underside of work.



MODEL TOP
available in belt widths of 24", 36", 50" and 54". Sanding action is overhead.

"We were faced with the problem of sanding 1000 vertical aluminum panels, 28'x24"x3/16" for the exterior of the new U. S. Air Force Academy buildings. These panels required finishing to a uniform and precision surface specification. Before we purchased the Timesaver Model TOP-50, we thoroughly investigated the market for sanding machines of this type. The Timesaver "Speedbelt" was the only unit which possessed the durability, accuracy and rugged construction necessary for our requirements."

The Cupples Products Corporation's experience is typical of Timesaver "Speedbelt" Installations throughout the country . . . where performance and need to achieve production and cut costs is important. They can do all flat metal surface finishing, polishing and sanding formerly assigned to other methods . . . and do them better. What's more, savings made in labor, materials and maintenance soon pay for their low initial cost.

Investigate the advantages of Timesaver Sanders for your plant, write for literature and information today.

TIMESAVER SANDERS

P.O. Box 7446, Robbinsdale Station • Minneapolis 22, Minn.

Pioneers in Wide Belt Sanding for the Woodworking Industry

For more data circle 317 on Postpaid Card

3,000,000 LBS. IS A LOT OF

K-260-G

STAINLESS STEEL BUFFING COMPOSITION

•

IT MUST BE GOOD

OVER 3,000,000 pounds sold since first introduced.

•

Outstanding for CUT and COLOR when used with all types Sisal Buffs . . . Also produces high color with cloth buffs.

***The* BUCKINGHAM PRODUCTS CO.**

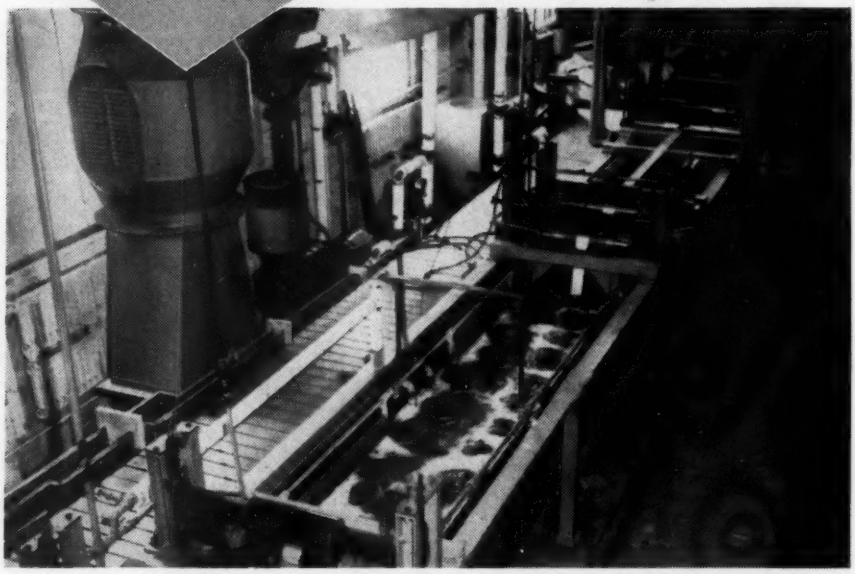
POLISHING and BUFFING COMPOSITIONS

14100 FULLERTON AVE. DETROIT 27, MICH.

For more data circle 318 on Postpaid Card

THIS FAN

helps engineers design better high-speed continuous systems



DeBothezat Bifurcator Fan installed in continuous strip test line at Matawan, N. J., plant of Hanson-Van Winkle-Munning Company.

This DeBothezat Bifurcator® Fan removes large volumes of corrosive fumes from a continuous high-speed test line at the Matawan, N. J., plant of Hanson-Van Winkle-Munning Company. Designed to exactly duplicate conditions in a given plant operation, the line is used to solve problems in strip anodizing, sealing and dyeing.

DeBothezat Bifurcator direct motor drive assures steady, trouble-free operation by eliminating belt problems. In-the-duct installation saves space and boosts efficiency by doing away with bends and angles. The Bifurcator motor is mounted in a separate chamber and corrosive fumes are bypassed around it.

From development of new systems to improvement of existing operations, DeBothezat Bifurcator Fans provide the correct solutions to all tank ventilation problems. Address Dept. PF-759 for DeBothezat Bulletin DT-7, "Design Data For Lateral Tank Ventilation."

De Bothezat™ FANS

A DIVISION OF

American Machine and Metals, Inc.

EAST MOLINE, ILLINOIS

IN CANADA: Represented by DOUGLAS ENGINEERING CO., LTD., Toronto • Montreal

FOR FURTHER INFORMATION SEE OUR CATALOG IN SWEET'S PLANT ENGINEERING FILE OR WRITE FOR COPY

For more data circle 319 on Postpaid Card

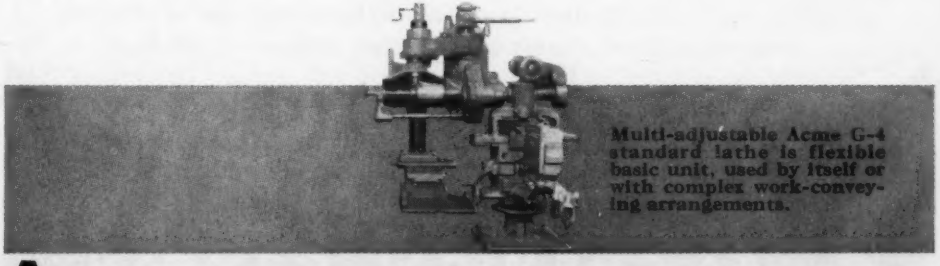
Half a century apart...
both finished by Acme machines!

Products change but people don't, and the same gleam and sparkle that sold Grandmother still sells consumer goods today. The finishing touch may be last but it is far from least, and is often loaded with problems. That's where Acme engineering skill comes in—and has, for fifty years.

Half-a-hundred years of experience is built into both kinds of Acme automatic equipment—the versatile standard units which are completely adjustable to product changes, and the custom-built units which convey and hold the work. Acme engineering skill combines them to make polishing and buffing machines capable of handling almost any finishing problem.

Whether you're interested in a completely automatic setup or a single versatile machine, take the first step toward reducing finishing costs and increasing production volume. Send for our new illustrated 16-page catalog today.

50 years of *Polishing Off* your finishing problems



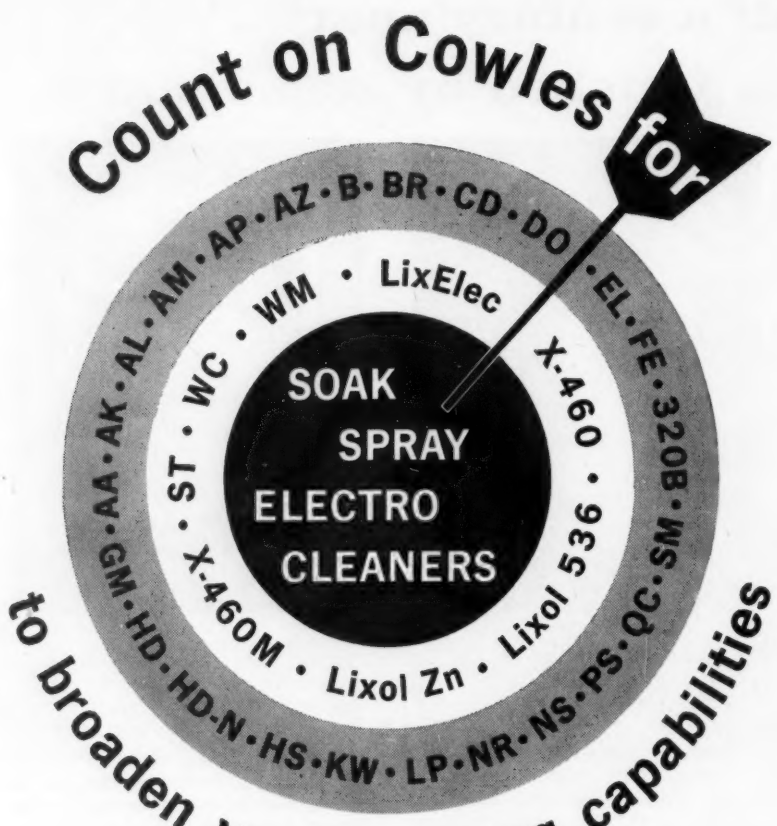
Multi-adjustable Acme G-4 standard lathe is flexible basic unit, used by itself or with complex work-conveying arrangements.

ACME MANUFACTURING COMPANY

1400 E. 9 MILE ROAD, DETROIT 20, MICHIGAN

LEADING PRODUCERS OF AUTOMATIC POLISHING AND BUFFING EQUIPMENT SINCE 1910

For more data circle 320 on Postpaid Card


Count on Cowles for
AA • AK • AL • AM • AP • AZ • B • BR • CD • DO • EL • FE • 320B • MS • QC • NS • PS • NR • LP • KW • HS • HD-N • HD • GM
LixElec • WM • WC • ST • X-460M • Lixol Zn • Lixol 536 • X-460
SOAK
SPRAY
ELECTRO
CLEANERS
to broaden your cleaning capabilities

You can boost your competitive advantage, *with equipment now in your shop,* by relying on the complete Cowles line of metal finishing chemicals—over 100 standard Cowles products and special formulations to handle difficult process conditions on all types of metals.

Arrange for consultation by writing today . . .

Established 1885

Cowles CHEMICAL COMPANY

7016 Euclid Avenue • Cleveland 3, Ohio

For more data circle 321 on Postpaid Card

Competitive Automotive Trim Finishes and Materials Today

When automotive designers first began to decorate cars with interior and exterior brightwork, and for many years thereafter, the finishing of trim parts was the exclusive province of the electroplating industry.

During the past ten years, however, other processes have arisen to compete with electroplating as a finish for trim parts. The use of anodized aluminum and stainless steel for exterior trim has become significant. In a report in this issue beginning on page 30, three industry spokesmen state the case for electroplating, anodized aluminum, and stainless steel.

Vacuum metallizing as a method of finishing interior automotive trim has increased substantially. Now vacuum metallizing bids for a share of the exterior trim business with a method of producing a thick film of aluminum on steel. One aim of the new process, discussed in the June issue of PRODUCTS FINISHING, page 162, is to make possible the manufacture of aluminum-coated steel automobile bumpers, which could subsequently be anodized and dyed.

Not to be left out of the "battle for the bumpers" one steel company has announced the development of a stainless steel "sandwich" to be used for fabricating bumpers. These bumpers would have a mild steel center and stainless steel exterior surfaces. First use of this material for truck bumpers already has been reported.

A spokesman for one aluminum company predicted that aluminum automobile bumpers would be in use by or before 1962.

To win back and retain the automotive market for its products, the electroplating industry has made great strides in improving quality of plated coatings. The use of "duplex nickel" together with a heavier chromium plate over die castings was covered in our June issue, page 138. Now, to further improve plated coatings, a "duplex chromium" process has been developed. This process is discussed in the article beginning on page 64 of this issue.

With the more effective plating processes, acceptable test methods and specifications for plated coatings now available, it is to be expected that plating will again take a more dominant or more competitive position in the field of automotive trim finishes.

There are preliminary indications that such a trend is already under way.

Ezra A. Blount

—EDITOR

Glossy Topcoats from Water Paints

Paints that can be used as the final finish are based on a new resin . . .

By ROBERT A. BOLLER

Group Leader for Coatings and Resins Research and Development Archer-Daniels-Midland Company Minneapolis, Minnesota

A water-soluble resin that is the basic element in a water-thinned paint makes it possible for finishers to apply hard (Table I, Fig. 1), tough, glossy topcoats that have properties comparable to many solvent-thinned paints. The resin, Arolon 1000, is a recently developed product of Archer-Daniels-Midland Co., Minneapolis. It makes a clear solution that can be diluted with as much water as you please.

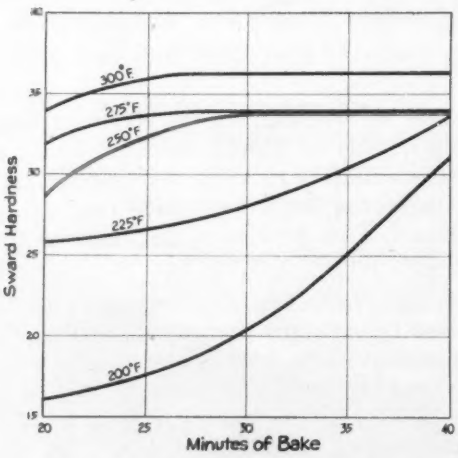


Fig. 1—Hardness developed by Arolon 1000 finishes at different baking schedules.

Earlier resins introduced by ADM (Arolon 110 and 304) were for primers only. This one is for the finish coat. Thus two-coat finishes can be applied with nary a drop of flammable solvent required.

Properties of the Films

Arolon 1000-based finishes require baking to develop desirable physical and chemical properties. After heat conversion of these paints, properties such as color retention, gloss retention and resistance to soap (Table II) and solvents are comparable to those obtained from melamine-modified coconut alkyds. Adhesion, toughness, mar resistance, juice and grease resistance (Table III, Fig. 2), salt-spray resistance and water resistance are equal to those of melamine-modified short soya alkyds, ADM reports.

Weather Resistance

After six months on south 45 degree Florida exposure, enamels based on the new resin show no checking or cracking. The initial gloss retention is comparable to that exhibited by standard baking alkyds. After three months of accelerated Florida exposure, however, the new finish chalks slightly faster than standard baking alkyds. Eight months of south 45 degree exposure in Minnesota causes only slight loss of gloss on white enamels.

Advantages

ADM cites the following advantages for its water-soluble systems:

- With a water-soluble resin, the paint is the same as a solvent-thinned formulation, except that water replaces the solvent. The only ingredients necessary are pigment, vehicle, water and sometimes a drier.
- Paints with water-soluble vehicles do not differ in film deposition and formation from solvent systems; the film integrity is excellent and is reflected in characteristics such as salt spray resistance and water-immersion resistance.
- Pigment binding and gloss retention are equal to those of solvent-thinned systems. High

Table I

SWARD HARDNESS OF AROLON 1000 VEHICLES* AT VARIOUS BAKING SCHEDULES

Minutes	Deg. F.	Sward Hardness
20	200	16
30	200	20
40	200	32
20	250	28
30	250	34
40	250	34
20	300	34
30	300	36
40	300	36

*Baked at temperatures of 200 deg. F. to 300 deg. F. The information is based on 1.5 mil wet film drawdowns of clear resin at 45 per cent solids on glass, baked without driers or catalysts.

Table II

DETERGENT RESISTANCE OF AROLON 1000 FINISHES*

24 hours	None
48 hours	None
72 hours	Very Slight Blistering
96 hours	Slight Blistering

*Baked for 30 minutes at 300 deg. F.

Table III

STAINING OF AROLON 1000 BAKED FILMS*

Oleic Acid	Moderate
Cottonseed Oil	Moderate
Grape Juice	None
Lemon Juice	Very Slight
Butter	None

*White enamels with pigment-to-binder ratio of 0.9 to 1.0 baked 30 minutes at 250 deg. F., exposed to chemicals for four days.

"Under normal atmospheric conditions, a flash-off period of 20 to 30 minutes should be allowed before baking . . ."

gloss at pigment-binder ratios of 1 to 1 or greater can be realized.

- Such paints can be applied by dipping and flow coating as well as by spraying.
- When spraying there is no tendency to "skin" or clog spray equipment, even after extended use.
- Paints can be frozen and thawed repeatedly without adverse effect.

Spraying Recommendations

You can't spray these paints in the same way you've been spraying solvent-thinned paints. The reason for this is that water releases more slowly than the usual solvents found in industrial finishes.

To help overcome the slower evaporation rate, a high air-to-fluid ratio is used. In addition, the gun should be held 12 to 18 inches from the surface being coated. This permits more water to evaporate during application so that the film will be drier. The film will flow out to develop wet gloss within a minute. If these enamels are sprayed "wet," sagging and pinholing may result.

Water paints should be used at higher viscosities than normal for organic solvent systems. For pressure pot spraying a viscosity range of 70-80 KU is suggested.

Recommendations for setting two typical commercial spray guns are as follows:

Using a DeVilbiss MBC gun, F F fluid tip and needle, and a No. 704 cap, the atomizing air pressure should be set at 40 pounds and the pot pressure at 10 pounds. Binks No. 18 or No. 19 guns with 630 fluid nozzle and 66 PE air nozzle will perform well at these same settings. To spray small laboratory panels, the fluid needle should be opened only one to two turns or a smaller delivery fluid tip used. The gun should be about 12 inches from the panel. For production spraying, the pot pressure may be increased to 15 to 20 pounds and the atomization increased to 60 pounds. The fluid needle should be fully opened. The gun should be 18 or more inches from the panel.

Flash-Off

Under normal atmospheric conditions, a flash-off period of 20 to 30 minutes should be allowed before baking the finish.

In suction-feed spraying, 60 to 70 KU consistency is considered the best. The DeVilbiss EX tip and needle and a No. 30 air cap, using about 50 pounds air pressure, or the Binks 66 fluid nozzle and 66SF air nozzle may be used, with the gun about 12 inches from the surface.

Hot Spray

Hot spray is definitely advantageous in applying water-soluble-resin-based enamels. It reduces air-dry time required to produce pinhole-free films. Enamels sprayed at 160 deg. F. to a dry film thickness of one mil require only about five minutes flash-off time if hot spray is used. Other advantages include improved sag control at greater film thickness, and the ability to spray at high viscosity.

Water-thinned enamels of 90-100 KU have been sprayed at tempera-

tures of 120-160 deg. F. Very little change in viscosity is apparent until reaching 120 deg. F., at which temperature the viscosity falls sharply and remains relatively constant up to 160 deg. F. As the temperature is increased, the flash-off time is decreased.

As in room temperature spray, best results are obtained with high air-to-fluid pressure ratios. Atomization pressures of 60 to 100 pounds and fluid pressures of 10 to 25 pounds have been used when spraying with a DeVilbiss MBC gun, FF fluid tip and needle and No. 704 air cap, or the Binks No. 18 or No. 19 gun with 63C fluid nozzle and 66PE air nozzle.

In cases where heat is applied to the container, agitate to maintain paint homogeneity. Heating for prolonged periods may have adverse effects on enamel stability and should be avoided. Stability should not be a problem if a heat exchanger is used.

High-Pressure Spray

Enamels based on the water-soluble resin also can be sprayed at room temperature, employing the high pressure (airless) technique. Results are similar to that obtained from a xylol-reduced alkyd. Viscosity of the enamel should be approximately 75 KU, and pressure levels of 1200 to 2000 pounds are recommended for proper atomization. Best results have been obtained with a spray tip having a wide fan angle. Care must be exercised in application to prevent excessive film build, which might result in sagging and pinholing. Flash-off time is similar to that required by conventional pressure spraying. It is assumed that high pressure hot spray would have advantages similar to those of the conventional hot spray method. However, this point has not been investigated.

Electrostatic Spray

These water-thinned enamels have been successfully applied by electrostatic spray. In one system a white enamel was sprayed at a viscosity of 19 seconds, (Zahn No. 2 cup) employing an atomizing pressure of 18 pounds.

In spraying such finishes, special attention should be given to the following factors:

1. Contamination. If the compressed air supply and spray equipment is not clean and oil-free, the enamels may show cratering. Oily surfaces are not compatible with water and will result in unsatisfactory finishes.

2. Evaporation. The slow evaporation of the water and the variability of evaporation rate with humidity and temperature influences flash-off prior to bake. Inadequate flash-off time causes

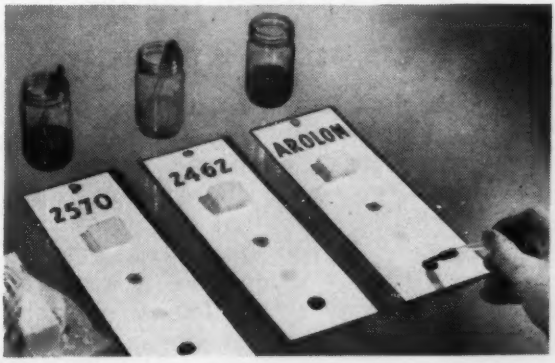


Fig. 2—Method of making tests for stain resistance of Arolon 1000 and other coatings. (Photographs courtesy Archer-Daniels-Midland Company, Minneapolis, Minnesota.)

pinholing. The flash-off time can be reduced to five to 15 minutes by using hot spray.

3. Baking Conditions. Pinholing will increase with higher initial baking temperatures and greater air circulation in the oven.

Uses

ADM recommends water-soluble-resin-based finishes for use on home appliances, office equipment, metal furniture, interior trim of automobiles, and toys. Manufacturers of scores of other metal products employing sprayed-on baking enamels now are testing these paints.

Future

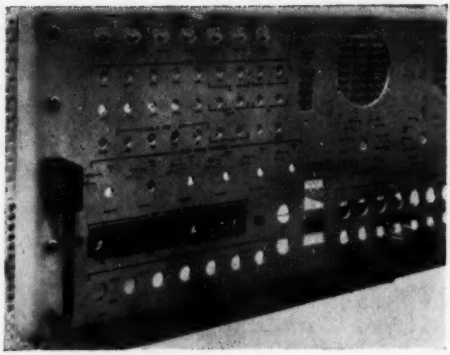
Water-thinned paints are in their infancy, ADM believes. The next steps, predicts the company, will be a water-soluble resin for exterior industrial finishes and air-dry water-soluble resins for top coats.

★ ★ ★

Silk Screening Saves Time in Marking Dials and Nameplates

Hughes Aircraft Company saves time in applying identification markings and printing control panels by using silk screen methods.

Silk screens that can be quickly mounted and demounted from frames are made from pasteups of prototype panels. The screens are then used for such jobs as printing small dials, computers, nameplates, gages, and so on. After use, the screens are filed, can be removed from the file and replaced in the frame, in register, for use at a later date.



Typical instrument panel finished by silk screening with Cat-L-Ink catalyzed coating. (Photo courtesy Wornow Process Paint Co., Los Angeles, Calif.)

The ability to re-use screens permits repeated short runs on short notice without the expense of preparing new screens.

Hughes calls the method "Permanent Catalyzed Marking." The word "catalyzed" is inserted because the marking ink used is a catalyzed epoxy-based coating. The coating is supplied by Wornow Process Paint Co., Los Angeles. Coating and catalyst are mixed just prior to application, have a pot life of six or eight hours.

Use of the catalyzed coating permits Hughes to apply coatings with the required resistance to humidity, temperature, impact, solvents, acids, alkalies, oil and other potential damaging materials and conditions which military equipment may have to face.

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

For sources of finishing equipment, materials, processes, use the PRODUCTS FINISHING DIRECTORY.

Metals Memos

News about metals and metal products . . .

Metals' Match?

DuPont will soon go into commercial production of Delrin acetal resin, a thermoplastic material which the company hopes to sell for many applications now served almost exclusively by metals.

The new product has many of the properties of metal, but is much lighter—20 per cent lighter than magnesium. It is extremely rigid, but not brittle, is both tough and resilient, like spring steel. It retains these properties under adverse conditions of stress, temperature, humidity, solvent exposure, and so on.

Price of Delrin is high—seven times that of zinc on a pound-for-pound basis. Even considering volume, Delrin is twice as expensive as zinc on a cubic-inch basis. But when processing and manufacturing costs — flash removal, buffing, and so on—are taken into consideration, Delrin begins to become competitive, since forming and finishing costs are much lower.

Metals' new competitor can be made as a colored product, or can be painted after molding.

Possible applications: automobile instrument clusters, carburetor parts, gears, bushings, bearings, door handles, window cranks, moving parts of clocks, cameras, appliances, pipes, shower heads, faucet bodies, fishing reels, combs, aerosol bottles.

Magnetic Metals

A simple magnet will tell whether a metal is high-quality stainless steel —the well-known 18-8, for example. Grades containing more than minor amounts of nickel are non-magnetic.

Helpful Hardware

New "Surfaset" door hardware recently introduced by The Stanley Works may be boon to home builders. Using this door latch, builder would mount door over the surface of the door opening, rather than in it. Door would open and close much like refrigerator door, with knob for pushing and pulling only, not for operating latch. Mounting system would greatly simplify hanging doors, since little fitting would be required; it would also help to cut costs, make door operation more reliable. Since door would not need fitting to the frame, it could be mill finished, thus reducing moisture absorption and warpage during transit. Hardware, which includes latch, strike, and pair of hinges, is available in brushed brass, brushed bronze, bright chromium and prime coat finishes.

Exterior Automotive Trim: Chromium Plate, Stainless or Aluminum?

Three authorities give the pros and cons on the commonly used types of automotive brightwork . . .

In recent years the designers and automotive finishing engineers have had to make a choice between three formidable competitors in the exterior trim business. Those bright parts collectively referred to by the garage mechanics as "chrome" have in reality been chromium plate, stainless steel and anodized aluminum. The relative merits of these different types of brightwork have been widely discussed.

Three experts participated in a recent symposium before the Society of Automotive Engineers to present the case for each of these materials. The papers and discussion presented are an exclusive recorded report on this symposium.

The speakers (and audience) discuss strength, durability, corrosion resistance, brightness and reflectivity, formability and other factors that influence the selection of materials for grilles, moldings, hub caps and other trim.

Electroplated Trim

By **MYRON B. DIGGIN**
Vice President and Technical Director
Hanson-Van Winkle-Munning Company

First, let us make it clear that we in the electroplating industry do not consider tonight's program a contest in any sense of the word. I would like to approach my subject with the feeling that the speakers on tonight's panel are fellow artists, each of whom represents an industry that is putting forth tremendous effort to maintain beautiful styling and to increase durability of exterior trim on automobiles.

Electroplated zinc die castings, electroplated steel, buffed or plated stainless steel and anodized aluminum all have been used successfully for bright exterior automotive parts and experience has demonstrated that the choice of the particular metal to be used depends upon many, many factors. Aesthetic factors are color, reflectivity, and the ability to preserve forms and appearance, all of which are originally given consideration and specified by

(continued on page 32)

Speakers who presented papers at the Society of Automotive Engineers' symposium on automotive trim (left to right): Myron B. Diggin, R. V. Vanden Berg and V. J. Snodgrass.

Aluminum Trim

By R. V. VANDEN BERG
Alcoa Process Development Laboratories
Aluminum Company of America

The use of aluminum trim for automobiles has increased rapidly since the first anodized trim appeared in 1954. It is widely used for grilles, headlamp and tail-lamp moldings, decorative panels and emblems. Although aluminum is available in a variety of forms and with many different finishes, the most important for automotive trim is anodized sheets and extrusions.

The aluminum sheet most frequently used for automotive trim is an aluminum-magnesium alloy. It is designated as Alloy 5357. Alloys X5457 and 5557 are new and show great promise. These alloys are of the same general type and are available in smooth, plain sheets and in a variety of surface textures. Textured sheets are available as mill products; that is, embossed or patterned sheets can be obtained direct-

(continued on page 38)

Stainless Steel Trim

By V. J. SNODGRASS
Supervisor, Quality Control
Enduro Div., Republic Steel Corporation

Bright trim is an important part of the automotive industry today. To the buyer, bright parts mean prestige and attractiveness. To the automotive designer, they are the least expensive way to restyle a car. To the dealer, they mean increased sales. Much of the appeal of any new car stems from styling highlights achieved by bright moldings.

Somewhere between the manufacturer and the consumer, brightwork terminology becomes pretty hazy. In service shops, all brightwork ends up being referred to and treated as "chrome." It just isn't so. On any recent model, three and sometimes four metals are used for exterior trim. Each of these has individual characteristics.

Stainless steel is one of the major types of brightwork used today. Per-car usage of stainless has been in-

(continued on page 44)

Electroplated Trim

(Continued from page 30)

the stylist-designer and judged finally by the consumer.

Practical factors are (1) the ability to form the material to achieve the desired design, (2) the permanence of the finish with respect to color, reflectivity and appearance, (3) resistance to attack in the service environment, and (4) cost.

The use of electroplated parts for automotive trim for protection and decoration is nearly as old as the industry itself. In 1907, Oldsmobile employed nickel plating for parts that hitherto had been brass. In 1921, the use of nickel was extended to radiators and lamps. Chromium plating over nickel was first used on automotive parts by Oldsmobile in 1925.

Since chromium plating over nickel came into universal use in the late 20's or early 30's, there have been very important advances in the electroplating art. Three of the most significant were (1) the introduction of bright nickel plating; (2) the development of deposits having high leveling or scratch-hiding properties, and, (3) the most recent development, in the use of duplex nickel coatings under modified chromium deposits. An additional development which has not yet been fully evaluated is the use of duplex chromium deposits for greater corrosion resistance.

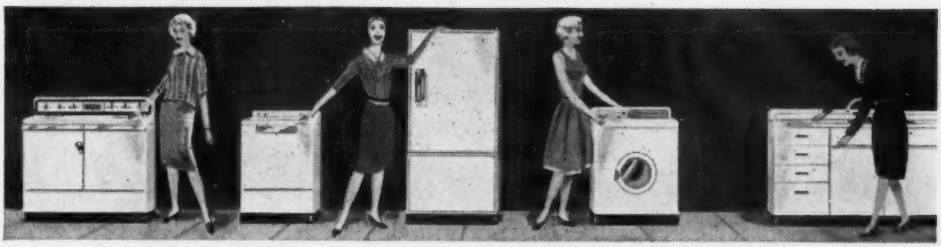
Your chairman of this section, Dr. R. B. Saltonstall, gave a talk before the Chicago Branch, A. E. S. Annual Meeting on January 31, and he spoke of some work that was being done on the application of chromium-nickel-chromium deposits for increased corrosion protection. It seems that the panels that Dr. Saltonstall was talking about weathered very well over a winter season; in fact, better than the conventional systems. All of these are being studied and evaluated now with the idea of achieving a finish that has greater protective value.

These developments were for the purpose of effecting cost reductions in the plating operation and in other operations associated with plating, such as the preparation of the basis metal, or buffing of the deposit.

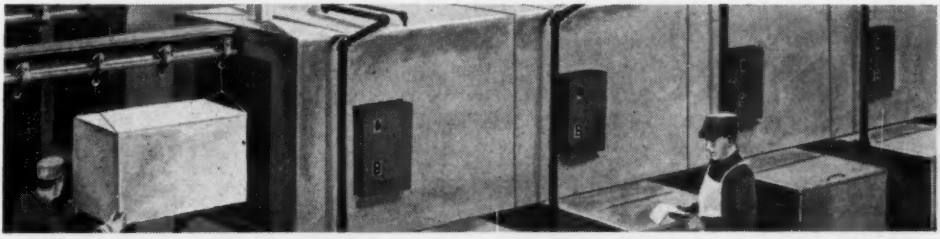
Despite the advances just cited which resulted from a tremendous expenditure of research man-hours, there is a recognition on the part of the plating industry for the necessity of improving the corrosion protective qualities of electrodeposits.

Producers and buyers of electroplated parts have been hampered in the past by lack of a yardstick for measuring the durability of the coatings. Until very recently, there were no reliable accelerated corrosion test methods for determining whether or not the plated parts were acceptable or what the life expectancy in various environments might be. In the past, research progress has also been hampered by having to rely to a great extent on atmospheric or service exposure which is both time-consuming and also uncertain because of variable weather. In other words, the research workers had to wait for a period of several months to get an indication of what direction they were going. Very fortunately and wisely, the American Electroplaters' Society activated Research Project No. 15 a few years ago to examine existing test methods, and, if they were

PRODUCT PROTECTION



MEANS CUSTOMER SATISFACTION



WITH AMCHEM GRANODINE

Mechanical and electrical performance notwithstanding, the external appearance of appliance products weighs heavily in determining continued brand preferences.

That is why many major appliance producers have insisted upon the use of Amchem Granodine as a durable base for paint finishes. This efficient chemical solution ideally converts metallic surfaces to a nonmetallic phosphate coating of the proper texture, acts as a reliable inhibitor of corrosion while greatly increasing the adhesion and durability of the paint finish.

You'll find Amchem Granodine an economical and reliable method of providing that lasting protection so important to the future sale of your products . . . at a cost consistent with manufacturing budgets. And you can count on Amchem's complete technical and engineering service to keep Amchem chemicals working at the level of greatest efficiency in providing protection that lasts for the life of your product.

Shown above is typical Amchem power spray system for chemically treating steel products.

Write for Bulletin 1380A with handy Selection Chart to help you choose proper Granodine type for your specific needs. Also available are bulletins describing other Amchem chemicals for use in appliance manufacturing.

AMCHEM GRANODINE

Amchem Granodine is another chemical development of **Amchem Products, Inc.**, Ambler, Pa. Formerly American Chemical Paint Company • Detroit, Mich. • St. Joseph, Mo. • Niles, Calif. • Windsor, Ont./Amchem and Granodine are registered trademarks of Amchem Products, Inc.

For more data circle 322 on Postpaid Card

found inadequate, to examine or develop new test methods that would indicate the quality of plating and its useful life in service.

There remains a considerable amount of work for Project No. 15 to complete so that the proposed tests can receive official recognition; however, the tests favored at the present time are being used as a basis for the acceptance of parts by purchasers and as a quality control test by producers. Furthermore, these accelerated tests have been of inestimable value to those engaged in research connected with improving or developing advanced plating processes and methods.

Using the newer techniques described earlier, the plating industry has already advanced in creating better quality plating and there is visible evidence of this improvement on the products which are now in the consumers' hands.

Now, let us present the facts about copper and/or copper-nickel-chromium electrodeposited coatings that have made them the preferred finish for exterior parts on cars for so many years. The pleasing color of chromium, and the ability to assemble parts plated from diverse sources with perfect color matching have been very important factors. In fact, other finishes are judged by the similarity of color to chromium. The permanence of the color, which is not obtainable with any other materials, and the brightness are of equal importance. The reflectivity of the finish, even when soiled with road dirt, is recognized as a valuable safety factor. When properly applied, the coating is hard and highly resistant to abrasion from windblown sand, flying stones and/or careless treatment. It will resist harsh alkaline detergents which are all-too-often used in car washing. It is easy to maintain in its pristine condition.

The use of plated coatings enables one to choose the most suitable metals or alloys for the basis metal. This is most advantageous from the point of: (1) freedom from many design limitations, (2) the selection of a material possessing the necessary physical properties to perform satisfactorily in service, and (3) a choice of the least expensive metal that will meet the first two requirements.

Commenting more definitely on these points, at the present time there is no material which can be substituted for a plated zinc alloy die casting in many cases. Such castings can be adapted economically to intricate design and styling without compromises which would dishearten the modish stylist. Although die castings have, to some extent, displaced steel stampings, the reverse is true in certain other applications. In many cases, parts formerly made of zinc die castings have been made of steel stampings which have been copper plated and buffed, and subsequently given a bright nickel and chromium finish. Presumably, the choice here is an economic one based on the ability to obtain a high degree of finish by buffing the copper. The use of steel stampings where they can adapt themselves to design requirements is undoubtedly an additional economic factor to be given consideration.

There has been a great deal of

For more data on advertisement on opposite page, circle 323 on Postpaid Card ——→

I'm no dope! I'd rather Spray than Scrape!

Peel Booths Clean with

"LIQUID ENVELOPE"

the *original* spray booth coating

Don't use high-priced spray-men on the "jack-ass labor" job of scraping down spray booths.

"Liquid Envelope" saves time, labor, money! Non-toxic. Won't corrode metal walls or ventilating ducts.

New Users: Be smart, order 5 gallon test-sample at drum-lot price.

BETTER FINISHES & COATINGS, INC.

268 Doremus Avenue, Newark 5, N. J. • • 2014 East 15th St., Los Angeles 21, Calif.

DISTRIBUTED BY

Abrasive & Supply Co., Detroit, Mich.
Air Engineering Corp., Baltimore, Md.
Avril, Inc., Reading, Pa.
Bay State Spray Equipment Co., Springfield, Mass.
Bison Corp., Canton, Ohio
Black Manufacturing Co., Baltimore, Md.
Bradley Paint Co., Los Angeles, Calif.
Budeke's, Inc., Baltimore 31, Md.
Buffalo Equipment & Chemical Co., Buffalo, N. Y.
Colonial Auto Supply, Norristown, Pa.
Cormac Chemical Co., Pittsburgh, Pa.
Dean & Barry Co., Columbus 15, Ohio
Ellicott Paint Co., Inc., Buffalo 3, N. Y.
Emery Waterhouse Co., Portland, Me.
Franklin Supply Co., Providence 3, R. I.
General Spray Equipment Co., Needham, Mass.
Crapak Co., Newark, N. J.
Gray Co., Newark, N. J.
H. & W. Chemical Co., Inc., Rochester, N. Y.
Hovey Spray Equipment, Philadelphia, Pa.
Hubbard Co., Los Angeles, Calif.
Kellerman Paint Co., New York, N. Y.
Koehler Rubber & Supply Co., Cleveland 15, Ohio
Lea Manufacturing Co., Waterbury, Conn.
The Leonard Company, St. Louis, Mo.
Meison Industrial Supply Co., Grand Rapids, Mich.
Mid States Industrial Corp., Rockford, Ill.
Vic Miner Co., Toledo 2, Ohio
George V. Morris Co., Philadelphia, Pa.
National Mill Supply, Inc., Fort Wayne, Ind.
O'Donohue Sales Co., Milwaukee 12, Wis.
Paints & Lacquers, Inc., Chicago 22, Ill.
Paterson Paint & Wallpaper Co., Paterson, N. J.
Protective Coatings, Inc., Tampa 6, Fla.
Quad Machinery & Supply Co., Little Ferry, N. J.
Raico Sales Co., Raleigh, N. C.
C. H. Reed Co., Hanover, Pa.
R. W. Renton & Co., Cleveland, Ohio
C. I. Smith Co., Washington 9, D. C.
Spray Equipment Co., Los Angeles, Calif.
Spray Way Co., Los Angeles, Calif.
Su Par Corp., Brooklyn, N. Y.
Geo. Swatek, Inc., Ridgefield, N. J.
Tanner and Co., Inc., Indianapolis, Ind.
Harold E. Young, Westbury, Long Island, N. Y.

FOREIGN DISTRIBUTORS

Jenson & Nicholson, Ltd., London E. 15, Eng.
G. Herring (Aust.) PTy., Ltd., Willoughby, S.W., Aust.
Bishop Products, Ltd., New Toronto, Ontario, Can.
Sidney Roofing & Paper Co., Ltd., New Westminster, B.C., Can.

For more data circle 323 on Postpaid Card

work done lately in adapting high-leveling solutions for finishing die castings, in an attempt to reduce cost. The objective here is to eliminate polishing and buffing of the die castings simply taking them from the dies which are kept in pretty good condition, possibly polished with diamond dust, and then carrying them, after breaking off the gates and flashing, right through the copper, bright nickel, and chromium without once sending them into the buffing and polishing room. Already many parts are finished that way, and engineers are working on larger parts with flatter surfaces in an attempt to reduce the cost of finishing.

This freedom of choice of the basis metal is most important when one considers that the plated part must have sufficient rigidity, strength and impact resistance to maintain its shape and appearance despite door slamming of adjacent cars, accidental bumping, stone and gravel showers and the indefinable things that happen when the wife takes the car to Slenderella, the sweet shop or the supermarket.

So far, we have brought out the advantageous features of electroplated coatings which, I believe, are indisputable. Many of you in the audience, I know, have wondered if the speaker would acknowledge that there have been certain shortcomings in the performance of plated coatings used for external automotive trim. The answer (in all fairness) must be an emphatic "YES"!

With the background of automotive electroplating built up since its first use in 1907, one wonders why perfection has not been achieved in the intervening years. The shortages of nickel during the Korean situation which led to extremely poor finishing did a great deal of harm to the plating industry but at the same time inspired those whose livelihood was derived from plating to redouble efforts to improve performance when conditions returned to normal. As pointed out earlier, very substantial gains have been made in technology and knowledge of what constitutes a satisfactory plated finish.

Fortunately, we now have the knowledge and understanding to specify and produce satisfactory finishes but it requires cooperation at every level. In many cases, a capital investment in equipment is required. There must also be a willingness to depart from the blind acceptance of conventional practices, some of which must be altered or improved to achieve the desired ends.

The responsibility for more durable plated finishes rests with:

1. THE DESIGNER

The parts to be manufactured and plated must have contours on the significant surfaces so that the distribution of the electrodeposit will provide corrosion protection.

2. THE PART FABRICATOR

In order to arrive at a satisfactory plated finish the basis metal must be sound and of good chemical composition. Die-cast parts must be made in properly designed dies which also must be maintained in excellent condition. Plating cannot hide defects that start with fabrication.

3. THE METAL FINISHER

The mechanical finishing of the part has a most important bearing

For better finishing at lower cost...

Planned, Periodic,

PERSONALIZED

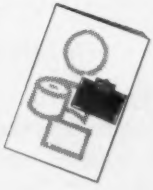
Metal Preparation

SERVICE

from Pennsalt

Pennsalt's exclusive Metal Preparation Service Plan gives you complete, planned service geared to the needs of modern high-speed operation. From a nation wide staff of specialists, you get aid in analyzing new surface preparation needs . . . help in installing equipment and training personnel . . . periodic check-ups with complete recommendations for improved operation . . . laboratory analyses of your special problems . . . advice on thrifty purchasing . . . fast emergency service. Pennsalt's "system approach" to metal finishing provides a complete line of quality processing compounds and automatic surface treating machines . . . and service that makes sure your machines and chemicals always work closely together.

Write Today for your copy of this booklet, or ask your Pennsalt representative for more information on the Pennsalt Metal Preparation Service Plan. Write Dept. 154.



METAL PROCESSING DEPARTMENT

PENNSALT CHEMICALS CORPORATION

East: 3 Penn Center, Philadelphia 2, Pa.
West: 2700 S. Eastern Ave., Los Angeles 22, Calif.

Pennsalt Chemicals ESTABLISHED 1850

For more data circle 324 on Postpaid Card

on the quality of the subsequent plated finish. The parts must be polished and buffed to achieve the desired finish without creating slivers, deep gouges, inclusions and other surface imperfections. The best plating practice cannot cover these defects in the basis metal and as a result, if they exist, failure is predestined to occur.

4. THE PLATER

Ask any plater and he will tell you that he is blamed for almost anything that goes wrong with a plated part. Let us be fair, he is not always responsible but there have been demonstrable weaknesses in some stages in the complex cleaning, pickling and plating operations.

First, there must be a careful selection of cycles of operation. Chemicals entering into the processes should be of known quality and purchased from reputable sources. Constant and adequate control of the chemical baths must be exercised, good housekeeping practiced and finally the parts must be packaged to prevent chemical or physical damage in transit.

5. THE CUSTOMER

Of course, the producer has no more control over the customer's treatment of plated trim than exists regarding the treatment of the paint finish, the engine, the tires or the upholstery. It is strange that there should be so much neglect and abuse of a possession which, outside of a home, represents the largest single investment the average man will make. Yet we have repeatedly seen late model cars which are the antithesis of "pristine." It is curious to note that many cars with bright parts in poor condition also have dulled paint, soiled upholstery, dents, nicks and other evidences of neglect. A moderate maintenance effort on the part of the owner would make a tremendous difference in the life of the finish. For example, waxing the painted and plated surfaces during the Fall will assist very greatly in overcoming the damage wrought by de-icing chemicals used on highways during the winter months.

In summary, the speaker has attempted to enumerate the attributes of plating for exterior automotive trim and, to be fair, has discussed some shortcomings that have been evident in the past. With the tools, materials, processing knowledge and improved testing methods now available, there appears to be little reason, except perhaps indifference, why plated coatings cannot be applied economically to give satisfactory service for the most discriminating car owner.

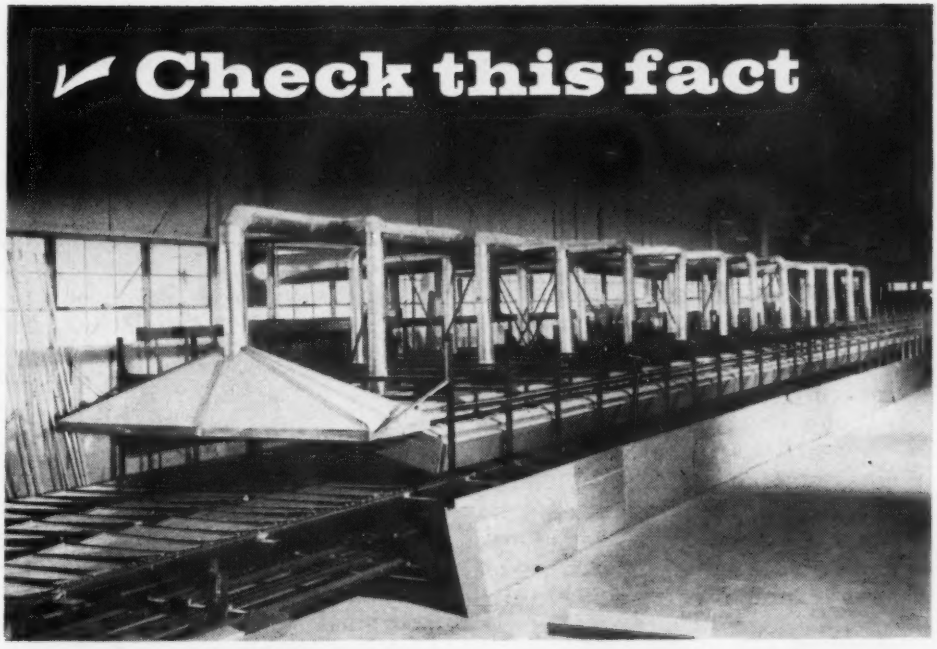
★ ★ ★

Aluminum Trim

(continued from page 31)

ly from the aluminum producer. They offer the designer interesting decorative variations. Aluminum sheet for trim is also produced in perforated and expanded forms.

Aluminum extrusions are useful in automotive applications both as functional and decorative parts. These mill products have been used extensively as automotive trim. In



84-ft. **driQuik** Infra-Red Oven turns out as much work at National Homes Corp. as a 350-ft. convection oven

It is significant that National Homes Corp., "the world's largest producer of quality homes," chose driQuik ceramic type infra-red ovens for baking finishes on its new Viking aluminum homes . . . for baking high temperature synthetic enamels on aluminum shingles, roofs, side walls, and siding . . . for bonding the components of the aluminum "sandwich-type" wall panels by activating special adhesives with infra-red heat at the correct temperature.

Whether your plant is large or small, a driQuik oven can increase your production and reduce unit costs on drying, baking and curing. Let us show you how with a FREE field demonstration right in your plant.

No Bulbs, Rods or Quartz Tubes To Burn Out

driQuik DIVISION
DRY CLIME LAMP CORP.
GREENSBURG, INDIANA

For more data circle 325 on Postpaid Card

producing grilles, for instance, it is possible to obtain a fluted design merely by using punchouts of the extruded mill product. This saves considerable forming and makes an attractive finished product.

Aluminum also has excellent forming properties. Deep-formed parts are easily made.

Anodizing

Automotive parts are almost always anodized for protection and maintenance of appearance. Anodizing is a comparatively simple process. It is not difficult to control. Basically, only four steps are required to produce good anodic films: cleaning; electrobrightening or chemical polishing to remove residual buffing compounds from the surface, or to brighten the as-rolled or as-formed surface; anodizing; and hot-water sealing.

The protective coating produced is essentially aluminum oxide. It is a true conversion coating, that is, the anodizing treatment converts the aluminum surface to aluminum oxide. This coating is integral with the surface. It cannot chip or peel. Such difficulties as blistering do not occur.

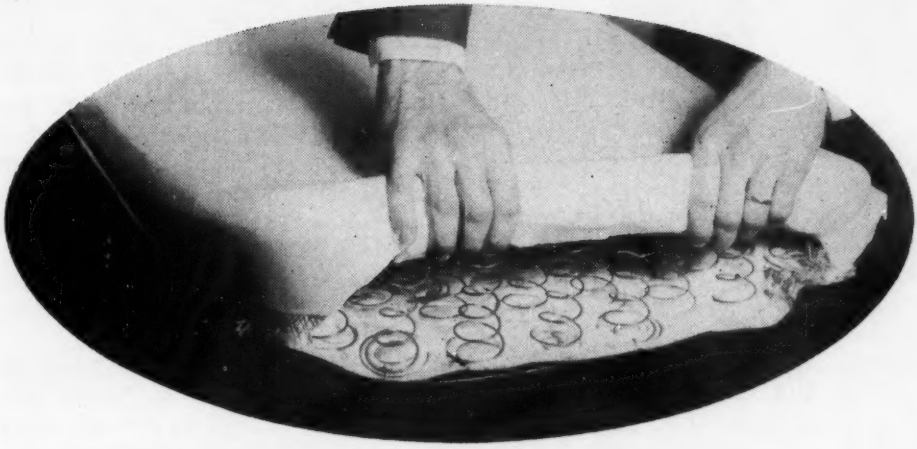
I do not mean to imply that rinses are unnecessary in the anodizing process. Rinses are required after each of the processing steps, just as in electroplating, but the rinses are not as critical. You do not have to be as careful when developing a conversion coating as you do when depositing layers of metals, because you do not have the problem of developing adhesion for each layer.

In contrast to electroplated coatings, where the coating is formed by depositing more metal on the *outside,* the anodic coating increases in thickness *"from the inside."* The coating next to the metal is the last formed. This can happen because the coating is actually very porous (there are about 500 million pores per square inch) during the anodizing process. This permits the anodizing electrolyte to penetrate almost to the aluminum metal and form more aluminum oxide or anodic coating.

This porosity would be a natural avenue of attack for corrosives if allowed to remain. To remedy this, the coating is sealed by simply immersing it in boiling water under controlled conditions. This permanently closes the pores.

Pores are important for another reason. When a colored anodic coating is produced, it is these pores that adsorb the organic dye or pigment. After the pores have been filled with the dye to produce the color, they are closed by immersion in a boiling hydrolizing compound, such as nickel acetate, under controlled conditions.

The fact that anodic coatings are conversion coatings can be an advantage as well as a disadvantage. Since they are conversion coatings, they reproduce the existing surface of the metal faithfully. This is an advantage if you are trying to maintain a texture or a patterned surface, but is a disadvantage if you are trying to cover up imperfections. The opposite is true of electroplated coatings, which tend to fill up textures, but will also hide minor imperfections.

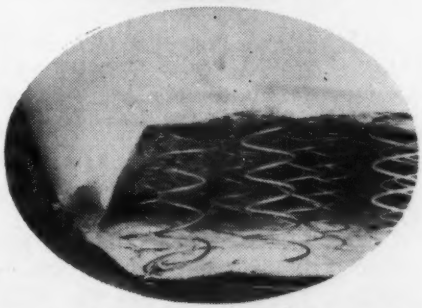


NOW---SPRING AND FOAM IN A SINGLE UNIT

The structural advantages of steel springs and the comfort of urethane foam are now combined into a single seating unit. This remarkable revolution in seating has been brought about through the cooperation of Reynolds' team of creative scientists, the automotive industry and research analysts from the spring division of Stubnitz Greene Corporation. This new seating development promises untold new horizons in design, in manufacture and in consumer comfort. For complete details on this totally new development, write or wire today.

ITS NAME:

REYNOCOIL



Steel spring and urethane foam merge to combine the structural and comfort advantages of both seating techniques. Cut-away shows interior of automotive seat.

REYNOLDS CHEMICAL PRODUCTS COMPANY

Whitmore Lake, Michigan • Phone HIckory 9-9361

DIVISION OF STUBNITZ GREENE CORP.

For more data circle 326 on Postpaid Card

Aluminum Trim . . .

One of the original decorative trim pieces of anodized aluminum on automobiles, the gold "V" on the Cadillac, was produced by coloring with a pigment. In this case, the pigment was iron oxide which was precipitated in the pores to produce the gold color which has excellent light fastness and permanence.

Characteristics of Anodized Aluminum

The characteristics of anodized aluminum most important in automotive applications are its excellent reflectivity, corrosion resistance and abrasion resistance. One of the properties of anodized aluminum that is often overlooked is its excellent reflectivity for white light. It reflects about 75 percent of white light, compared to approximately 65 percent for chromium plate. Of course, since this is reflectivity for white light, anodized aluminum is reflecting more light but does not have quite the mirror-like appearance or specularity of chromium plate.

Reflectivity of anodized aluminum depends upon the transparency of the anodic coating. Actually the light is reflected by the aluminum beneath the coating; you are looking through the coating. This explains why it is important to select the proper alloy when good reflectivity is required. When impurities are present in the aluminum, these impurities will also be present in the anodic coating, either in their original form or as oxides, and they will "cloud" the film and reduce its transparency. A difference of only 0.5 percent in purity will make a noticeable difference in reflectivity.

Abrasion resistance is an important property of anodized aluminum used for automotive trim. Actually the anodic coating is a thin film of the same material used in many grinding and polishing wheels (aluminum oxide or alumina). This is a hard substance. Abrasion resistance increases with film thickness. The heavier films resist abrasion better.

Corrosion resistance of anodized aluminum is excellent. Panels with coatings from 0.15 to 0.3 mil thick (the range recommended for exterior automotive applications) will withstand 350 hours of standard neutral salt spray with little damage. Corrosion resistance is decreased as the anodic film thickness is decreased.

Applications

Aluminum's qualities can be demonstrated by describing some of the tougher applications for anodized aluminum, both in the automotive field and outside the automobile industry. Perhaps one of the toughest tests to which anodized aluminum has been put is marine service. The "SS United States" provided anodized aluminum with its first major service test in marine applications. Prior to the building of this ship, aluminum had always gone to sea with several coats of paint. About 4,000,000 pounds of aluminum were used in the superstructure of this ship.

All of the hardware inside and outside on this ship is bright or matte-finished anodized aluminum. Thickness of the anodic coating used for the door hardware for both inside and outside of the ship is in

How many places can you use push-button touch-up?

Damage to the finish of your product happens anywhere—from your own assembly department to the final customer. With the Sprayon Self-Spraying Touch Up Tool *any* employee quickly repairs the damage *right where it happens.* Costs go down. Eye-appeal of your product and customer satisfaction go up! Sprayon goes right to your source for your own touch-up finish, custom loads the Tools for you under your own label. Exclusive Sprayon features mean even unskilled help do a factory-match job in minutes ...for pennies! It's a complete paint shop in a can!

Write for FREE touch-up folder.

Free training movie, "The Finishing Touch" (16 mm, sound, color, 11 minutes) Write for information.

SPRAYON *Self Spraying* TOUCH UP TOOL®

SPRAYON PRODUCTS, INC.

2064 East 65th Street • Cleveland 3, Ohio

For more data circle 327 on Postpaid Card

the same range as used for automotive applications. All the hardware on the exterior (the cap rails, hand rails and storm rails) is subjected to heavy salt spray. I have seen this ship come in with salt and soot encrustations almost 1/16 inch thick. It has been in service for seven years now and the anodized aluminum hardware is in excellent condition.

Another application where aluminum has proved its corrosion resistance and exterior durability is the General Motors Scenicruiser. This bus was manufactured about 1940 and the anodized aluminum side panels and bumpers as well as the painted aluminum panels have given excellent service.

I have had anodized aluminum wheel discs on my car for more than 2½ years, and a simple washing with soap and water or a Brillo pad still brings them back to their original appearance. We have had other trim on test cars for periods up to 3½ years under various types of road conditions and this trim is still in excellent condition.

Jewelry is a surprisingly tough application. The anodized aluminum used for this purpose must pass rigid tests for abrasion, alkali, perspiration and acid resistance. Aluminum with an anodic coating of the same order of thickness now used in automotive applications successfully passes all these tests.

Reflectivity is demonstrated by the use of anodized aluminum for floodlight reflectors. Here, aluminum treated by the Alzak process (buffing, brightening and anodizing), is commonly used and has given excellent service.

Builders' hardware with anodic coatings has been common for a good many years. It demonstrates the excellent abrasion resistance of anodized aluminum.

★ ★ ★

Stainless Steel Trim

(continued from page 31)

creasing. Indications are that 15 per cent more stainless per car will be used this year compared to last year. The biggest difference between stainless steel and other types of brightwork is that all other types of metals require a protective treatment, which is susceptible to deterioration, while stainless requires no surface treatment beyond buffing.

In discussing the use of stainless steel for automotive trim, an opportunity exists to present the story of a metal that is stainless not only on the surface, but all the way through.

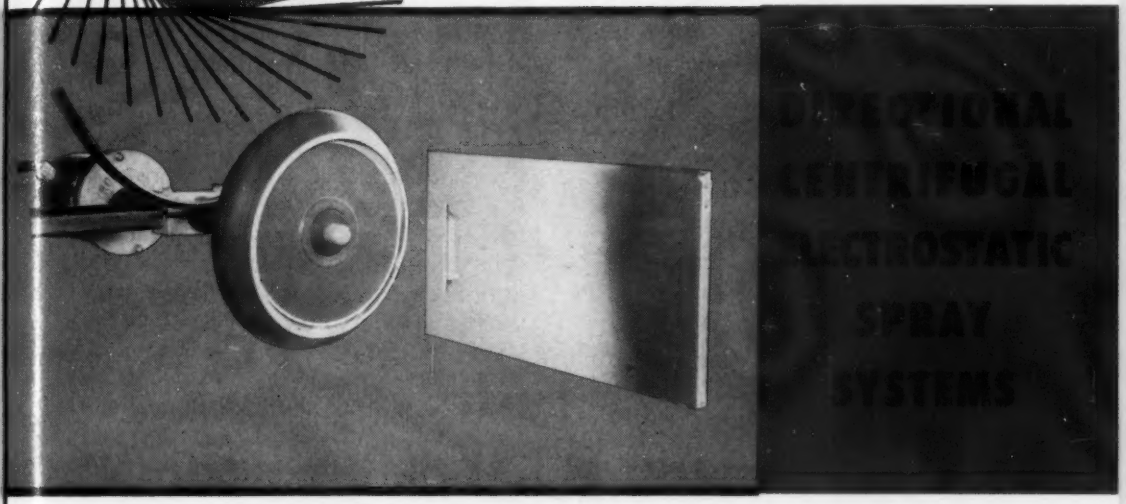
The stainless alloys currently used by the automotive industry represent only a few of those available. The automotive engineers have determined that Type 430, containing about 17 per cent chrome and low carbon, fulfills most requirements for automotive body and window trim. They have found that this ferritic alloy has the required corrosion resistance when buffed to a mirror finish.

Other types of stainless that should be mentioned in discussing automotive applications include Type 301, an austenitic alloy with greater ductility, used for applications that require deep drawing; Type 202, an austenitic material of

For more data on advertisement on opposite page, circle 328 on Postpaid Card

GYROMAT

Announces:



FEATURES:

1. Centrifugal force is used to atomize and direct the coating material instead of air, and therefore, there is no expanded air to require high velocity exhausts. This feature in combination with an electrostatic field insures high material efficiencies and coverage.
2. Heads emit a consistently uniform directional controllable fan; can be sprayed from any attitude. Fan intercept is rectangular, flat spray type.
3. Skip spraying feature reduces rejects — eliminates build-up, accommodates empty fixtures or gaps — thus eliminating necessity of bunching conveyors.
4. Produces almost perfect overlap and match-in.
5. Many recessed areas, corners, etc. not otherwise possible electrostatically, handled with ease by Gyromat.
6. Very high speed coverage.
7. Simple installation — no major changes usually involved in existing conveyor lines.

Write for complete data

THE GYROMAT CORPORATION

KINGS HIGHWAY CUT-OFF
FAIRFIELD, CONNECTICUT

chromium-nickel-manganese composition, designed to conserve nickel, and useful in fabricating certain window moldings with severe contour; and Type 302, a material for development work in making clad bumpers and component parts of the stainless steel exhaust system now under study.

One of the outstanding characteristics of stainless steel that is of interest to automotive engineers is its high strength-to-weight ratio. In general, the trend is toward lighter-gauge stainless, to cut cost, since the strength of stainless is often sufficient to permit use of thinner sections than could be considered in other metals.

High strength also makes it possible to make parts with excellent resistance to denting. For the same reason, stainless fits well into the designer's plans for thinner sections without sacrificing strength—the advent of the hardtop designs with their thin corner posts is a good example of this trend.

Probably the most important reason for stainless steel's popularity as automotive trim is its corrosion resistance. When buffed to a mirror finish, it has excellent resistance to damage from salt, chemicals and various corrosives. It is not easily harmed by scratching and denting, and it will not pit or peel.

Finishes on stainless used for 1959 automobiles range from mill polishing without further treatment to a chromium flash plate. The most popular finish results from buffing the bare metal to a mirror-bright surface.

In some cases, stainless steel is chromium plated to obtain a color match with other parts on the car that require chromium plating. But with stainless, no underplatings of nickel are needed to provide resistance to corrosion.

Applications

Exterior applications for which stainless is virtually standard on 1959 model automobiles include wheel covers, body side moldings, windshield moldings, roof and rear window moldings and rocker panel moldings. It is also being used for door handles, ornaments, grille bars and lamp housings. Stainless steel beading and molding is used extensively for interior trim and instrument panel moldings and miscellaneous hardware. These uses account for approximately 85 per cent of all the stainless used by the automobile industry.

Stainless is often used for moldings around anodized aluminum body panels. It protects the softer metal from scratching and denting.

In recent years stainless has also been used for several major body panels. The first of these was a stainless steel roof top for the Cadillac Eldorado Brougham. The 1959 Chrysler Imperial also has a stainless steel roof section. Experience has shown that stainless steel body panels such as these can be welded to carbon steel body stampings on a production-line basis.

Much development work is being done with a method of using a combination of stainless and cheaper metals to cut costs. The technique, which is not new, is multiple roll forming, a process in which stainless and galvanized steel or other

To page 50→

Wyandotte's amazing new development for steel electrocleaning!

Never before an electrocleaner like this! New MAXAMP delivers a new high in performance; brings you outstanding efficiencies never before possible.

MAXAMP'S new and greater conductivity and maximum detergency handle those really tough jobs: stubborn smut, buffing and polishing compounds; phosphate coatings from drawing operations. Cleaning results are remarkable—your plating is mirror bright and stain free!

MAXAMP gives unequaled performance in handlines and automatics. Also important: MAXAMP is anhydrous, which means you buy *all cleaner*, no built-in water. Gives maximum results with minimum concentrations. And there's ideal foam control—no explosions, yet keeps fumes from escaping.

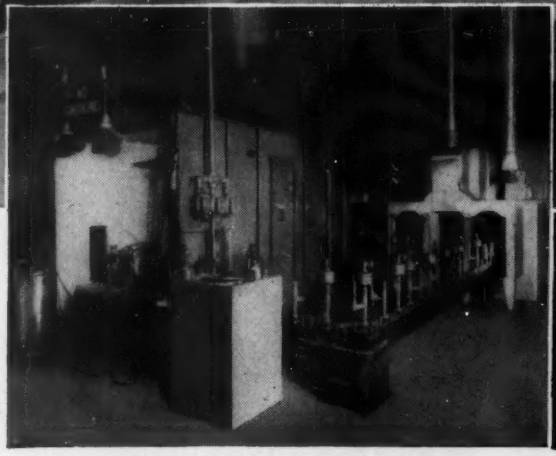
So, if you're interested in more efficient electrocleaning operations—and who isn't?—it'll pay you to investigate MAXAMP. It's the "new king of steel electrocleaners!" Call your Wyandotte representative for a demonstration, today! *Wyandotte Chemicals Corporation, Wyandotte, Michigan. Also Los Nietos, California. Offices in principal cities.*

Wyandotte CHEMICALS

J. B. FORD DIVISION

THE BEST IN CHEMICAL PRODUCTS FOR METAL FINISHING

For more data circle 329 on Postpaid Card



Above: Binks Model 21 automatic spray guns paint top, side and bottom of each motor. Motor rotates when in front of the guns.

Left: Overall view showing one of two similar painting operations.

At the Westinghouse Electric Corporation
Small Motor Division Plant, Upper Sandusky, Ohio...

Binks spraying machine paints motors...in seconds

"Our Upper Sandusky plant was designed for production of small motors with 5-year guarantees," reports Mr. H. A. DePree, chief of manufacturing planning for this Westinghouse plant. "To do this, we automated every process, including finishing, to achieve maximum quality control."

Automatic, 2-color finishing

With Westinghouse engineers, Binks developed a spraying system that insures uniform 3 mil finishing of motor parts and assemblies . . . even sprays 2 colors on command from coding devices.

Better finishing for your products

This Westinghouse installation is typical of thousands where Binks engineers and equipment have assisted in helping a manufacturer reduce finishing costs . . . boost quality. This Binks finishing knowledge and equipment team is available to you.

Free finishing analysis

Whether you use materials that flow like water or have the body of heavy coatings . . . Binks will show you the method of application best suited to your needs. The analysis will be made under production conditions, using your products and your finishing and coating materials. There is no obligation. Just call your Binks Branch Office or write direct.

Ask about our spray painting school
Open to all...NO TUITION...covers all phases

Binks
EVERYTHING FOR
SPRAY PAINTING

SPRAY GUNS

AIR COMPRESSORS

NATIONWIDE SERVICE

Binks Manufacturing Company
3118-40 Carroll Ave., Chicago 12, Ill.

9333

REPRESENTATIVES IN PRINCIPAL U.S. & CANADIAN CITIES • SEE YOUR CLASSIFIED DIRECTORY

For more data circle 330 on Postpaid Card

metals are roll formed together. Bumpers made of steel which has been covered on both sides with a minimum layer of stainless are under test as a method of combining the economy of the steel bumper with the scratch and corrosion resistance of stainless.

The design of wheel rims is being modified to make possible the use of stainless.

Stainless steel will stay bright and shiny for the lifetime of a modern car, with only a minimum of effort required for maintenance. No other metal of comparable cost offers such enduring and durable beauty.

Discussion: Exterior Automotive Trim

Why is it that anodized aluminum parts are not required to have the same reflectivity as chromium plated zinc die castings? I am referring to parts that may be made of either material, such as headlamp "doors." I believe when you compare the two, the reflectivity isn't equal.

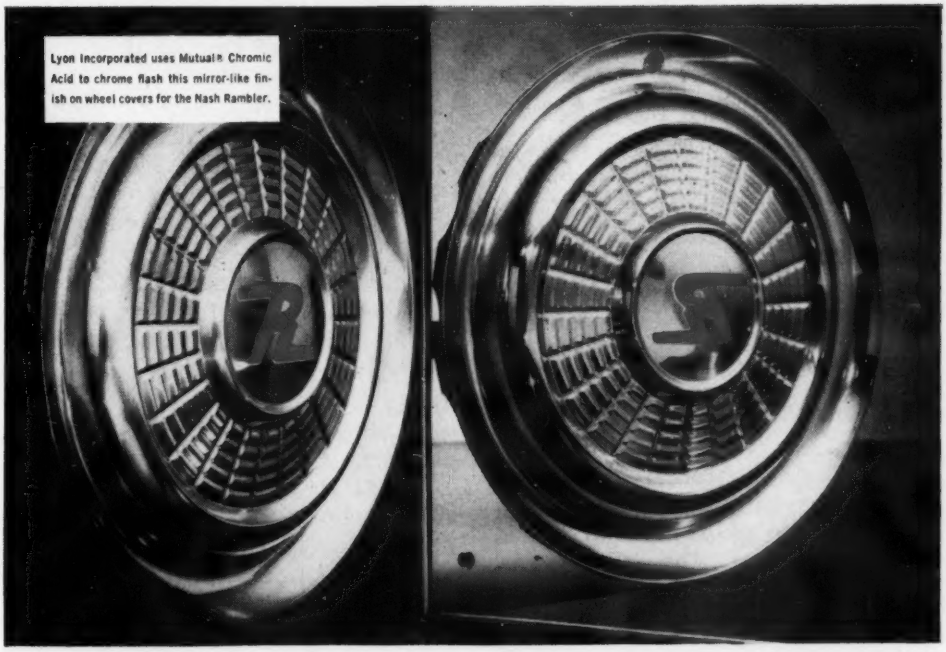
Mr. Diggin: I don't know why, but I agree.

Mr. Vanden Berg: You will recall that in my talk I said that anodized aluminum has greater reflectivity for white light. If a good reflector is needed for white light, ultraviolet or infra-red, it will not be chromium plated. It will be aluminum.

Mr. Diggin: *Isn't the difference we are talking about that between specular and diffuse reflectivity?*

Mr. Vanden Berg: I think what we are talking about is closer to specular reflectivity. You see, an anodized surface is actually a double-surface reflector. You get reflectivity from the surface of the aluminum and from the surface of the coating. Chromium plate is essentially a first-surface mirror. All of the light

Speakers and moderator for automotive trim symposium (left to right): Myron B. Diggin, R. V. Vanden Berg, V. J. Snodgrass, Dr. R. B. Saltonstall. Dr. Saltonstall, vice chairman, Engineering Materials Activity, Detroit Section, S.A.E., and technical director, Udylite Corporation, served as moderator for the symposium. (Photos by PRODUCTS FINISHING)


Lyon Incorporated uses Mutual® Chromic Acid to chrome flash this mirror-like finish on wheel covers for the Nash Rambler.

MIRROR FINISH THAT NEEDS NO BUFFING!

Chrome flashed by skilled plater using MUTUAL CHROMIC ACID

Experienced platers, like Lyon Incorporated, rely on high purity Mutual Chromic Acid to produce chrome plate that's decorative and durable. Combining careful control with Mutual Chromic Acid, Lyon produces a mirror-like finish which requires no buffing whatever after chrome plating! The plating is done over 301 Stainless Steel in a bath of slightly lower acid-sulfate ratio than that used for plating over nickel.

Mutual Chromic Acid is always 99.75% pure—or better. Its low sulfate content (less than 0.1%) makes it easy for you to control the acid-sulfate ratio of your plating bath. This safeguards against plating difficulties—and expensive rejects!

For technical information about Mutual Chromic Acid, send coupon for our free booklet, "Chromium Chemicals." Our Technical Service Staff will also be happy to answer your questions.

OTHER PRODUCTS FOR PLATERS

SOLVAY® Ammonium Bicarbonate • SOLVAY Caustic Soda
SOLVAY Hydrogen Peroxide • SOLVAY Methylene Chloride

Allied Chemical

SOLVAY PROCESS DIVISION
61 Broadway, New York 6, N. Y.

MUTUAL chromium chemicals are available through dealers and SOLVAY branch offices located in major centers from coast to coast.

SOLVAY PROCESS DIVISION 26-79
Allied Chemical Corporation
61 Broadway, New York 6, N. Y.

☐ Send Bulletin 52 "Chromium Chemicals"
☐ Have a representative phone for appointment

NAME _____
POSITION _____
COMPANY _____
PHONE _____
ADDRESS _____
CITY _____ ZONE ____ STATE _____

For more data circle 331 on Postpaid Card

is reflected from the surface of the plate.

We have increased the corrosion resistance of zinc plated parts by dipping them in dichromate baths and have had wonderful results. I am wondering if it would be possible to chromium plate zinc die castings that have been dichromate treated and thus improve their corrosion resistance.

Mr. Diggin: No. I have seen parts that have been chromated in preparation for painting, and then the customer changed his mind and wanted them plated. The only answer was to strip the parts and start over again.

How long will stainless steel withstand 20 per cent neutral salt spray?

Mr. Snodgrass: Type 430 will normally last for about 24 hours. Type 201 is comparable to 302 — that would be about 100 hours.

Mr. Vanden Berg, you mentioned that impurities in the metal blur the clear anodic coating. If this is true, why is it that high-purity aluminum does not brighten as well in a chemical bright dip as it does in an electrolytic bright dip?

Mr. Vanden Berg: Actually the high-purity parts will brighten equally well in the chemical bright dip if the conditions are right. The two processes are based upon the same principle: simultaneous formation and dissolution of an oxide coating. In an electrolytic bright dip the part is made anodic and the oxide film forms and is dissolved by the electrolyte.

In a chemical bright dip, essentially the same thing takes place except that the current is furnished by electrochemical reactions. One chemical is an oxidant and another is a solvent for the oxide coating. But you still need electrolytic action—in other words, current generated from within the system. In chemical brightening baths this current is furnished by galvanic action. In the lower-purity alloys, the generally accepted theory is that the metallic impurities in the metal act as centers for galvanic action; this explains why they brighten more easily. But you can get equal results, even if brightening a high-purity alloy, just by adding copper to the chemical brightener. Then the copper ions that cause the galvanic action are furnished by the chemical brightening solution rather than the metal itself. Pick your conditions; the heavy metal must be furnished either by the solution or the metal being brightened.

Mr. Vanden Berg, you mentioned that you had anodized aluminum wheel covers in service for three years. Did you have white wall tires on these same rims?

Mr. Vanden Berg: Yes.

When you had this car washed, were the anodized covers cleaned with the common alkaline steam cleaning solutions that car-washers normally use to clean white walls?

Mr. Vanden Berg: No. Fortunately, I clean my own white walls with Brillo pads. I do not subscribe to the idea that a passenger automobile should be cleaned in the same way railroad maintenance men clean

NOW YOU CAN SEE
"Little Steve"
RIGHT IN YOUR OWN PLANT

BRING THIS STEVENS
"ROAD SHOW" TO YOUR DOOR

Thousands of visitors to the A.E.S. Exposition saw the "Little Steve" automatic plating and processing machine in action. Perhaps you were one of the many who said they wished others in their organization could see this remarkable machine perform.

Now the mobile display model can be brought directly to you. At your request, a Stevens representative will arrange a special showing. "Little Steve" will be put through its paces before the eyes of your entire staff right in your own plant.

Avail yourself of this remarkable opportunity today. Merely send a request on your company letterhead and a private viewing of "Little Steve" will be promptly arranged. Just address your request to:

frederic b. **STEVENS,** inc.

DETROIT 16, MICH.

BUFFALO CHICAGO DETROIT CLEVELAND
DAYTON NEW HAVEN INDIANAPOLIS SPRINGFIELD (OHIO)

Remember **— When you go *automatic* . . . go STEVENS!**
For more data circle 332 on Postpaid Card

"The (anodic) coating thickness currently being used for automotive parts is 0.15 to 0.3 mil."

locomotives. I do not think it is good for the rest of the car, and I do not see any reason that an inhibited alkaline cleaner would not be perfectly satisfactory.

But this is commercial practice, isn't it?

Mr. Vanden Berg: Unfortunately, yes. They steam clean cars even though it is not recommended, but it would seem that it would be possible to educate them otherwise.

You said that abrasion resistance and corrosion resistance increased with the thickness of the film. How about light reflectivity? Would it go up or down?

Mr. Vanden Berg: Reflectivity would decrease with increasing anodic film thickness. However, the higher the purity the less the effect.

If you wanted to match the reflectivity of chromium as closely as possible, would you use a thick or thin coating?

Mr. Vanden Berg: It would depend upon the purity of the alloy used to fabricate the part. Using superpurity aluminum you can go as high as 0.5 mil of anodic coating and still match bright chromium plate, for all intents and purposes. Such alloys are quite expensive, and this is a problem the aluminum industry is working on at present, to reach a compromise between anodic coating thickness and alloy composition.

You do have to compromise abrasion resistance and resistance to corrosion to obtain maximum brightness. But the question is, just how far must you compromise to obtain an appearance match with chromium? The coating thickness currently being used for automotive parts is 0.15 to 0.3 mil.

Mr. Diggin: I think you are assuming that it is possible to match chromium with anodized aluminum. While you can simulate the appearance of chromium, it is most difficult to match.

What minimum thickness of anodic coating would you recommend for outdoor exposure and how long does it take to form such a coating?

Mr. Vanden Berg: The generally accepted minimum is 0.15 mil based upon present commercial alloys. This is generally known as a 120 ampere-minute coating and would take ten minutes to produce at a current density of 12 a.s.f. at 70 plus or minus 2 deg. F. in 15 per cent by weight sulfuric acid.

Why is it that all stainless steel body side moldings rust at pressure points—the points where clips or other attaching devices hold them onto the body? We have been faced with this problem of rust running down on the paint for years now and have gone through quite an extensive program to find out why. We have coated the clips with everything we could think of. We used rubber clips, aluminum clips and nylon and still have rust running down the side of the car. It is a serious problem and we have to do something about it.

900 SPRAY

HIGH GLOSS BAKE ENAMELS
READY MIXED

- *GOLD*
- *BRASS*
- *COPPER*
- *BRONZE*
- *ALUMINUM*

LOOKS LIKE HIGHLY POLISHED PLATING

ONE SPRAY. ONE BAKE. Eliminates *clear top coats.* Bakes to permanent high gloss. Available in all bronze powder colors.

Liberal samples will be furnished on request. Advise colors that you are interested in.

O'NEAL PAINT PRODUCTS, INC.

P.O. BOX 2694

15115 CHATFIELD AVE. CLEVELAND 7, OHIO

For more data circle 333 on Postpaid Card

Mr. Snodgrass: You are right, it is a serious problem. The pressure points you refer to are at the points of attachment. At these points you have a point of contact. Any time you entrap moisture and set up a cell in this way, especially on unbuffed stainless, you reduce the corrosion resistance. Take a piece of stainless, unbuffed, put a pebble on it overnight, and you get rust. It is a problem of contact corrosion. Frankly, if care were taken in buffing the area where the pressure points occur, the problem might be solved.

We have buffed that return flange with everything we know of, and it still gives us trouble.

If stainless is stainless all the way through, why is such care needed in preparing the surface to prevent corrosion?

Mr. Snodgrass: Stainless has a chemical composition that is capable of offering stainless properties only when properly buffed. This operation encourages the formation of the oxides of chromium that give stainless steel its corrosion resistance. Stainless, in an unbuffed condition, is not stainless and we never claim that it is. Even plain carbon steel has better corrosion resistance if you buff the surface mirror-bright.

If the stainless molding were chromium plated, would this prevent the corrosion at pressure points?

Mr. Snodgrass: A chrome flash enhances tarnish resistance; therefore it would be reasonable to believe that corrosion resistance at pressure points would be improved.

How would your 430 stainless compare with the corrosion test results Mr. Vanden Berg mentioned for aluminum?

Mr. Snodgrass: The 430 stainless would probably not look as good, but I am not certain that I could correlate the two.

Dr. Saltonstall: Even if we could correlate the tests, I am not sure the results would be particularly meaningful. In some rather recent work being done on A.E.S. Project 15, we found that trying to extrapolate results from a corrosion test on one type of finish to other types of finishes by comparing accelerated test results just doesn't work. To have these tests mean anything, you have to correlate each of them with actual outdoor exposure results *for that finish*, not compare with other finishes, and then predict from this information how a given finish will hold up in exterior service.

Mr. Vanden Berg: I think the comparative results are significant as long as they douse the streets with salt the way they do at the present time.

Dr. Saltonstall: There is more to it than that. The streets aren't doused with solutions that have a pH of 2 or 2½. Corrosion can vary tremendously with the nature of the corrodant. I am not talking against accelerated tests because I think the ones we have coming along are really going to point us the way to

Two of the four Sel-Rex Jet Platers —complete electroplating facilities in 34" x 28" x 33" cabinets. This equipment is used as a step in the process of producing some of the printed wiring boards for the SAGE computer, and for experimental equipment currently under development.

IBM Plating operator removes printed wiring board from Sel-Rex Jet Plater where it has been plated with Sel-Rex Bright Gold. The Jet Platers assure optimum conditions for the electrodeposition of Sel-Rex Bright Gold for this exacting application.

Heart of the SAGE System is the 275 ton IBM computer, one of the world's largest and most reliable. Shown here are some of the computer frames containing pluggable electronic units that perform the data processing involved in solving air defense problems.

SEL-REX BRIGHT GOLD AND 4 JET PLATERS HELP PROVIDE "BUILT-IN" RELIABILITY TO IBM SAGE COMPUTER

When it comes to protecting our country from possible surprise air-attack, only the best, most reliable instruments and equipment will do. Understandably, IBM was chosen to build the 275 ton computer pictured in part at the lower left, which is the heart of our SAGE System. The SAGE computer performs millions of computations at lightning speed, and continuously checks them—*automatically.*

Approximately 7,300 pluggable units containing printed card assemblies are used in this computer. Needless to state, the proper functioning of these units is essential. Sel-Rex Bright Gold, in four Jet Platers, is used in the manufacture of the IBM SAGE computer, and other military equipment under development. Built-in reliability—for which IBM equipment is famous the world over—assures us all of constant electronic watchfulness 24 hours a day.

Sel-Rex can offer built-in reliability to your product through the unique metallurgical properties of a precious metal—or by designing plating or metal finishing equipment to your specific requirements... from a single piece of equipment to a complete facility. Our latest catalog—#CHP—gives details.

SEL-REX CORPORATION

NUTLEY 10, NEW JERSEY

Manufacturers of Exclusive Precious Metals Processes, Metallic Power Rectifiers, Airborne Power Equipment, Liquid Clarification Filters, Metal Finishing Equipment and Supplies

For more data circle 334 on Postpaid Card

Now! Corrosion-proof plating room floors with

New Penntrowel

Penntrowel is a new kind of resin surfacing material that drastically reduces maintenance of concrete floors in plating rooms. It's easy to use, fast curing, low in cost . . . yet gives you tough, long-lasting protection against corrosion and wear.

Write today for complete information on Penntrowel.

Corrosion Engineering Products Dept. 972

Pennsalt Chemicals ESTABLISHED 1850 ®

PENNSALT CHEMICALS CORP. Natrona, Pa.

Penntrowel is a trade-mark of Pennsalt Chemicals Corp.

For more data circle 335 on Postpaid Card

better finishes, but let's not try to translate results from one type of combination of metals to another type of finish until we have actual service experience with exterior exposure on both types.

Summing up the discussion, I would say that when one is concerned with only one type of finish, he is inclined to believe that his area is the only one that has problems. I think this discussion has shown that this just isn't true. There are problems with all types of bright trim, just as there are good qualities for each type of bright work. The important thing is that with the interest we all have in the problems, and with the work that is in progress, we are going to solve many of these problems before long.

These papers were presented before the Detroit Section, Society of Automotive Engineers, and are published by permission of this organization.

★ ★ ★

Finishes for Aluminum, a new, handy-size reference containing latest information on the subject, is available from Reynolds Metal Co.

Starting with cleaning treatments, the booklet explains theory and method for five major types of finishing operations — mechanical, chemical, anodic, organic and porcelain enamel—including their advantages, disadvantages and costs. Its aim is to provide information needed to select the best finish for a particular application.

Copies of *Finishes for Aluminum* can be obtained by writing Reynolds Metals Company, Dept. PDR-9, Box 2346, Richmond 18 Virginia.

fostoria INFRA-RED SYSTEM

radiant heating news

to help manufacturers improve production operations

How to choose the right INFRARED for radiant ovens...

Consider, first of all, that processors using infrared generally find *electrical* radiant heating superior. Here are three good reasons:

1. *Greater Control.* Heat is directed more accurately to product at variable rates, and easily controlled.
2. *Cleaner.* No products of combustion exist in electric infrared ovens.
3. *Reliable supply.* Electricity is the modern fuel always available in large quantities.

Source factors to consider: Of all electric infrared sources, only these are proved practical for general industrial use in radiant ovens:

1. Clear glass lamps (G-30 type)
2. Quartz lamps (tubular shaped)
3. Quartz tubes (tubular)
4. Metal sheathed rods (tubular)

Each of these heat sources has distinct characteristics. All have advantages and disadvantages under certain conditions, as listed in chart below. A choice should be made only after evaluating each according to the following factors:

• Heat output (intensity)

Determine intensity (or heat rating) you require—the amount of heat in watts or BTU available per square inch or square foot. No need to select high-watt rated sources if not needed.

• Efficiency

Electric infrared oven users obtain a reliable rating in watts or BTU delivered to heat source at all times. *Radiant efficiency* of electric infrared sources vary according to their temperature. The higher this temperature, the greater is radiant efficiency. Sources that operate at lower temperature give off more convection heat, less radiation. Efficiency of an electric infrared oven also depends on proper selection of *reflecting surface, contour of reflector* and *oven design.*

• Speed of response

How quickly oven reaches operating temperature is important in many applications—and so is the speed with which oven cools down. If "override" temperatures present a serious problem, heat sources with instant response are preferred.

• Cost factor

Costs vary among infrared sources, so cost differences can be justified only after evaluating job requirements. Low-priced infrared lamps can be used if they do the job. Requirements for faster heating, for higher intensity, for extra ruggedness, and other factors usually dictate the choice of heat sources. It's almost automatic.

We will gladly advise you. You will get unbiased counsel when we help you select the right heat source. No other infrared supplier can offer you *all* practical sources—and none provide such complete service *before and after the sale.* Proper design, skilled installation and continuous efficient performance with greatest economy are assured.

Send for free 20-page book, "Radiant Heat—Applications Unlimited." Write to Department 722.

Comparison Of Infrared Heating Sources

CHARACTERISTIC	QUARTZ LAMP	METAL ROD	QUARTZ TUBE	G-30 CLEAR LAMP
Potential Heat Output	Very High	High	Low to Medium	Low to Medium
Splash Resistance	Very Good	Very Good	Very Good	Low
Impact Resistance	Low	High	Low	Low
Color Sensitivity	Low	Very Low	Very Low	Low
Life Expectancy	Very Good	Very Good	Good	Very Good
Brightness (visible light)	High	Low	Low	Medium
Response (heat up, cool down)	Quick	Slow	Medium Slow	Quick
Cost Factor	see cost factor paragraph above.			

THE FOSTORIA PRESSED STEEL CORPORATION • Fostoria, Ohio

For more data circle 336 on Postpaid Card

Speedier Painting at National Grille

New finishing system paints conveyorized parts . . .

Electrostatic spray has helped to speed production in a new plant built by National Grille and Register Company in Cleveland, Ohio. Two Ransburg No. 2 electrostatic disks now paint more than 100 different styles and sizes of grilles and registers.

All phases of manufacture are handled in the modern plant. Beginning with flat steel (14 to 24 gauge), National Grille cuts, perforates, forms, welds, assembles and finishes.

Unpainted parts are hung on fixtures at nine-inch centers, one or two parts to a fixture, depending upon size. Everything up to eight-foot lengths is painted by this system. The smallest parts painted are four to six inches long.

The loaded conveyor rises overhead to a three-stage washer and then to a gas-fired drying oven. After dry-off, unpainted parts travel into the first of two identical electrostatic spray stations. The conveyor makes a loop around a pit-mounted No. 2 Process reciprocating disk, where one side of the part is coated. From the first station, the conveyor makes an S-loop, and the opposite side of parts is painted at the second elec-

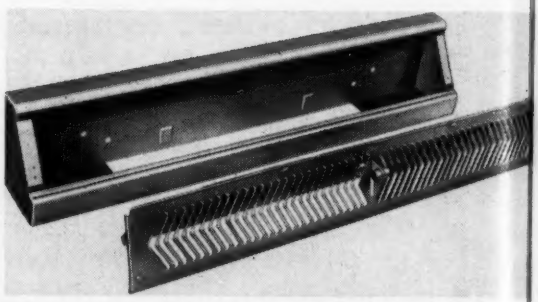
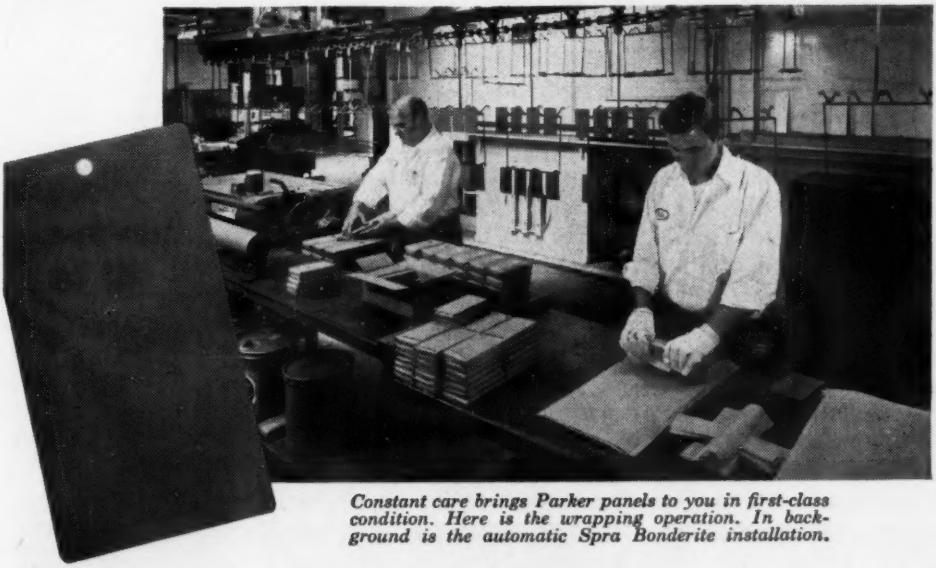


Fig. 1 — This Arro-Flex baseboard-type diffuser is typical of the products made by National Grille and Register Company in its modern Cleveland, Ohio, plant.

Fig. 2—Registers and grilles are coated as the conveyor makes a loop around the first of two identical electrostatic painting disks.

Eliminate Variables From Your Test Program

BUY PARKER PAINT TEST PANELS!



Constant care brings Parker panels to you in first-class condition. Here is the wrapping operation. In background is the automatic Spra Bonderite installation.

Automatic production, from press through flat polishing and processing, plus eight quality control checks keep Parker panels dependably uniform. Reproducibility of test results is assured day in, day out with Parker panels.

Dependable Uniformity

Only Parker with its years of experience in metal surface preservation has made the necessary capital investment for automated equipment and set up control systems to guarantee panel uniformity with resultant dependable test results.

Industry confidence is attested to by the more than 700,000 Parker panels bought each year.

So exacting are Parker quality controls that there is a recorded "case history" behind every Parker panel.

Variety of Panels Available

Both phosphate coated and bare steel panels are available. Untreated panels are carefully polished and cleaned while treated panels can be furnished with any of the many Bonderites in use today.

One side of all steel panels is flat polished and marked so that either the polished side or the unpolished side can be readily identified even after painting. This positive identification permits consistent use of either side as desired.

For reliable test results, you need Parker panels. Write today for bulletin and price list.

Since 1914—leader in the field

PARKER RUST PROOF COMPANY
2172 E. MILWAUKEE, DETROIT 11, MICHIGAN

BONDERITE corrosion resistant paint base | BONDERITE and BONDERLUBE aids in cold forming of metals | PARCO COMPOUND rust resistant | PARCO LUBRITE wear resistant for friction surfaces | TROPICAL heavy duty maintenance paints since 1883

*Bonderite, Bonderlube, Parco, Parco Lubrite—Reg. U.S. Pat. Off.

For more data circle 337 on Postpaid Card

trostatic station. Disks are 15 inches in diameter and the reciprocator operates at nine strokes per minute.

Some louvered parts require hand touchup, and this is done by the operator of the electrostatic painting equipment.

In addition to prime coat, the electrostatic disks apply white, black, metallic and egg shell oak finishes. Speed of the 675-foot-long conveyor is five to nine f.p.m. A complete cycle takes about 75 minutes, from loading to inspection and unloading.

After painting, parts move along into a gas-fired oven where they bake for 15 minutes.

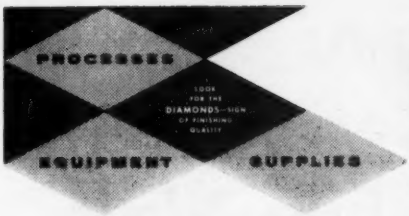
Color changes are made several times daily. The change is made in a minute and a half—with no down time — by simply running thinner through the lines between color switches.

★ ★ ★

Aluminum Finishing Manual. Booklet contains a detailed discussion of many different problems concerning finishing of aluminum. Includes data on cleaning, deburring, etching, deoxidizing, descaling, preparation for welding and anodizing, and treatment of corroded stock.

Copies are available from Frederick Gumm Chemical Co., Inc., 538 Forest St., Kearny, N. J.

Fig. 3—Operator unloads painted parts from the line. Unpainted registers at left have just been hung on the line and are moving in the opposite direction, into the washer. (Photographs courtesy Ransburg Electro-Coating Corporation, Indianapolis 23, Indiana.)



NOW...

FROM ALLIED RESEARCH

. . . a new systems concept

PROCESS ENGINEERING SERVICE

BUILT AROUND THE MOST IMPORTANT PART OF YOUR OPERATIONS . . . YOUR PROCESS REQUIREMENTS

Why a PROCESS Engineering Service?

Helping customers solve process and equipment problems of all types leads to one conclusion which prompted us to offer this unique service to the entire metal finishing industry.

Only by integrating equipment with your particular process are you assured of getting these important benefits from your operations: (1) higher production, (2) greater efficiency, (3) lower operating costs, (4) consistent product quality.

WHAT DOES OUR PROCESS ENGINEERING SERVICE CONSIST OF?

CONSULTATION — Experienced representatives assist you in planning any part or all of your process and equipment requirements.

RECOMMENDATION — Trained engineers recommend the particular process, equipment and chemicals to provide you with the best in operating efficiency and economy.

INSTALLATION — Planned, engineered and supervised — including plumbing, electrical, ventilation and disposal requirements — and whatever is needed for efficient operations.

SERVICE — Field Engineers insure proper start-up and make necessary maintenance recommendations. They are available for periodic check-up.

"TURN-KEY" Service — Let Allied Research take complete responsibility for laying-out, designing, building, installing and servicing your complete process operations. Open the door to your plant and start production.

Call your Allied Field Engineer. He's listed under "Plating Supplies and Equipment" in the yellow pages. FREE TECHNICAL DATA FILES on Allied Research processes, equipment, chemicals on request.

Allied Research Products, Inc.

4004-06 EAST MONUMENT STREET • BALTIMORE 5, MARYLAND
BRANCH PLANT: 400 MIDLAND AVENUE • DETROIT 3, MICHIGAN
West Coast Licensee for Process Chemicals: L. H. Butcher Co.
Chemical and Electrochemical Processes, Anodes, Rectifiers Equipment, and Supplies for Metal Finishing

IRIDITE®	IRILAC™	ISOBRITE®	ARP®	WAGNER
Chromate Coatings	Clear Coatings	Plating Brighteners	Chemicals & Supplies	Line of Equipment

For more data circle 338 on Postpaid Card

Duplex Chromium: Thicker, More Corrosion-Resistant Chromium Plate

Increased corrosion protection for electroplated parts is obtained with a new type of thicker bright chromium deposit. Process can be adapted to existing production space and equipment with minor changes . . .

By **DR. EDGAR J. SEYB, JR.**
Research Supervisor
Electrochemical Research Laboratory
Metal & Thermit Corporation

Thicker chromium plate, properly applied, is an effective method of achieving greater durability. In addition to work by Metal & Thermit Corporation, independent studies at Battelle Memorial Institute sponsored by American Zinc Institute have concluded, as recently as last October, that "increasing the thickness of copper and nickel is less effective in preventing corrosion than increasing the thickness of chromium."

The automobile industry, the largest user of electroplated parts, has become more and more quality conscious, in response to public demand. As a result, higher per-

Fig. 1—At a Press Conference on May 26, H. D. McLeese, vice president of Metal & Thermit Corp., stressed the value of Duplex Chromium to the automotive industry. Henry Mahlsted, product manager for plating, also discussed features of the new development.

formance standards have been set for exterior plated parts. This is borne out by the new severe accelerated corrosion tests developed by the industry in cooperation with A.E.S. and A.S.T.M.

Two new tests have been adopted by the automotive industry to evaluate performance of chromium plated exterior parts. These tests are said to be: 1) more indicative of actual service performance, 2) faster, and 3) more reproducible.

Corrodkote Test

The Corrodkote Test follows procedures developed by Chrysler Corporation's engineering department, in cooperation with A.E.S. Research Project No. 15. This test now is used by both Ford and Chrysler. It consists of application of a standard, highly-corrosive slurry in a uniform coating on the part or panel to be tested. After this coating dries, the test piece is placed in a non-condensing humidity cabinet for 16 hours, after which the piece is cleaned and corrosion evaluated. When additional cycles are to be run, the slurry is re-applied at the beginning of each.

Copper-Accelerated Acetic Acid Salt Spray Test

This test, commonly called the CASS Test, follows procedures prepared by General Motors Corporation. An extension of the more familiar Acetic Acid Salt Spray Test, the CASS Test adds copper chloride to the test salt solution, and also increases test temperature. The rate of attack is thereby speeded up from four to six times.

The following A.S.T.M. designations (Fig. 3) are commonly used to evaluate corrosion. A rating of 8 generally is considered minimum passable for production quality control purposes.

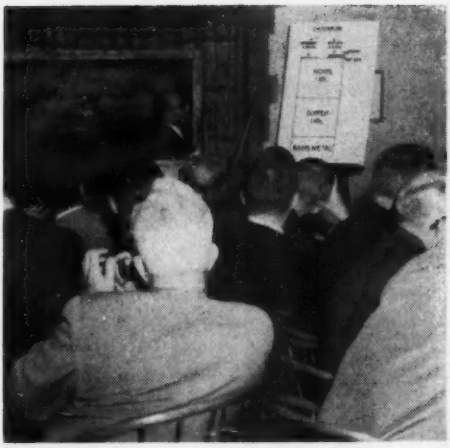


Fig. 2—Dr. E. J. Seyb described the Duplex Chromium process, covering results of corrosion tests made on various plated products and citing examples of processing cycles and conditions. (Photos by PRODUCTS FINISHING.)

A.S.T.M. RATING	PER CENT CORROSION
10	0
9	less than 0.1
8	.01-0.25
7	0.25-0.5
6	0.5-1.0
5	1.0-2.5
4	2.5-5.0
3	5.0-10
2	10-25
1	25-50
0	more than 50

Sixteen hours of either Corrodkote or CASS Test is generally ac-

cepted to be equivalent of one year's service in the Detroit area—considered to be as severe corrosion-wise as any location in the country because of snow and salted streets, and its heavy industrialization.

With the standard 0.00001-inch deposit of chromium that has been specified in the automobile industry for the last 25 years, failures are common in 16-hour Corrodkote or

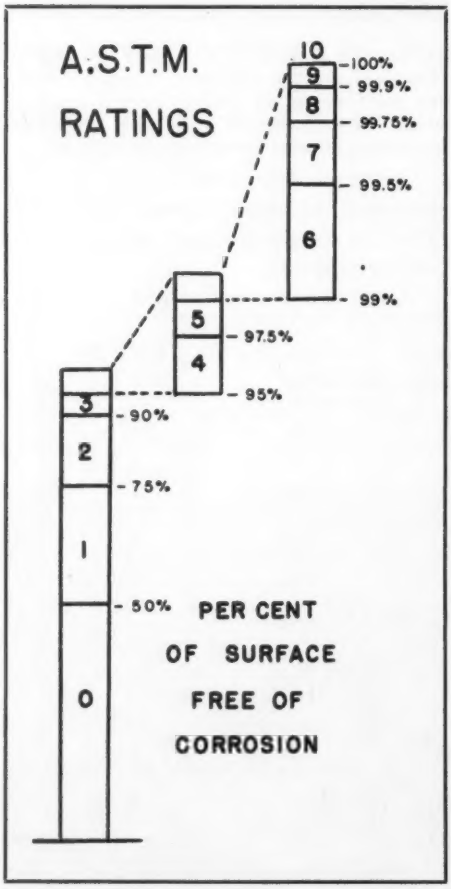


Fig. 3—Relationship between corrosion and A.S.T.M. ratings for plated coatings.

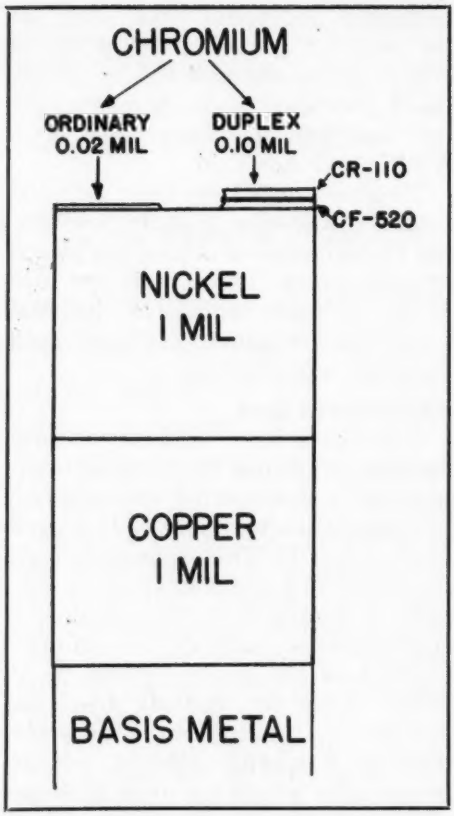


Fig. 4—Chart showing graphically relative thicknesses of typical plated undercoats as well as thicknesses of chromium plate.

CASS corrosion tests.

First Step Toward Thicker Chromium

In 1953, Metal & Thermit introduced Unichrome Crack-Free Chromium CF-500 bath as a means of producing a thicker and more corrosion-resistant deposit without cracking. The deposit produced with this bath had a satin finish suitable for industrial purposes. For decorative use it required buffing.

Further research resulted in development of the Unichrome Bright Crack-Free CF-520 bath. In addi-

FOUNDATION makes the difference!

INTERLOX
assures a sound base for your finish.

The Interlox line, developed by Northwest's Cleaning Specialists, gives you a better, lower cost, easily controlled phosphate base for organic finishes. Interlox iron phosphate products deposit a high quality, fine grained, dense coating with great speed and dependability.

There is an Interlox product for every need whether spray or immersion type, single or multiple stage. Interlox baths are unusually long lived and require less additions and control. Northwest's production-tested chemicals and dependable recommendations will save you money.

Licensed Manufacturers | **Alert Supply Co. Los Angeles, California**
Armalite Company, Ltd. Toronto, Canada

NORTHWEST CHEMICAL COMPANY
9310 ROSELAWN DETROIT 4, MICHIGAN

For more data circle 339 on Postpaid Card

tion to producing thicker bright deposits with no cracks, it was found to possess good covering and throwing power: the ability to provide thicker chromium in recesses.

Research has been conducted on both cracked and crack-free chromium. A special operating procedure using SRHS formulation CR-110 has been developed which produces a unique crack pattern. Plated over a crack-free CF-520 chromium deposit, the combination provides improved corrosion resistance.

Duplex Chromium

The present Duplex Chromium process consists of an initial application of bright crack-free CF-520 chromium for optimum coverage and buildup in low current density areas, followed by a second bright deposit of finely cracked chromium from a specially - operated CR-110 bath. In the CF-520 plus Special CR-110 duplex process, each of the two types of chromium has different physical characteristics. No buffing is required of either deposit.

The corrosion of plated automotive trim parts, which has caused so much concern, is caused by the rapid pinhole rusting and blistering attributed to electrolytic cell action. The corrosion is a stripping action where the rate of penetration and removal of metal is dependent upon the cell

MOISTURE-FREE SURFACES in 1/2 THE TIME!

Model 20 New Holland KREIDER Centrifugal Dryer

Air-dries . . . as it Spin-dries! Eliminates scoring and marring . . . speeds up production . . . cuts down on rejects!

SPECIFICATIONS:

1-h.p. motor—220, 440, 550 volts—2 or 3 phase. Spins 75-lb. loads at 825 r.p.m. Quiet V-belt drive. Arc-welded steel plate construction. Weight 490 lbs. Requires minimum floor space. Meets N.E.C. specs. Auxiliary electric or steam heating units available as optional equipment.

Send for illustrated 4-page folder. Write Dept. F-759

NEW HOLLAND MACHINE COMPANY
NEW HOLLAND, PA.

For more data circle 340 on Postpaid Card

For more data on advertisement on opposite page, circle 341 on Postpaid Card ——→

FOR 30 YEARS!!

CLINCO

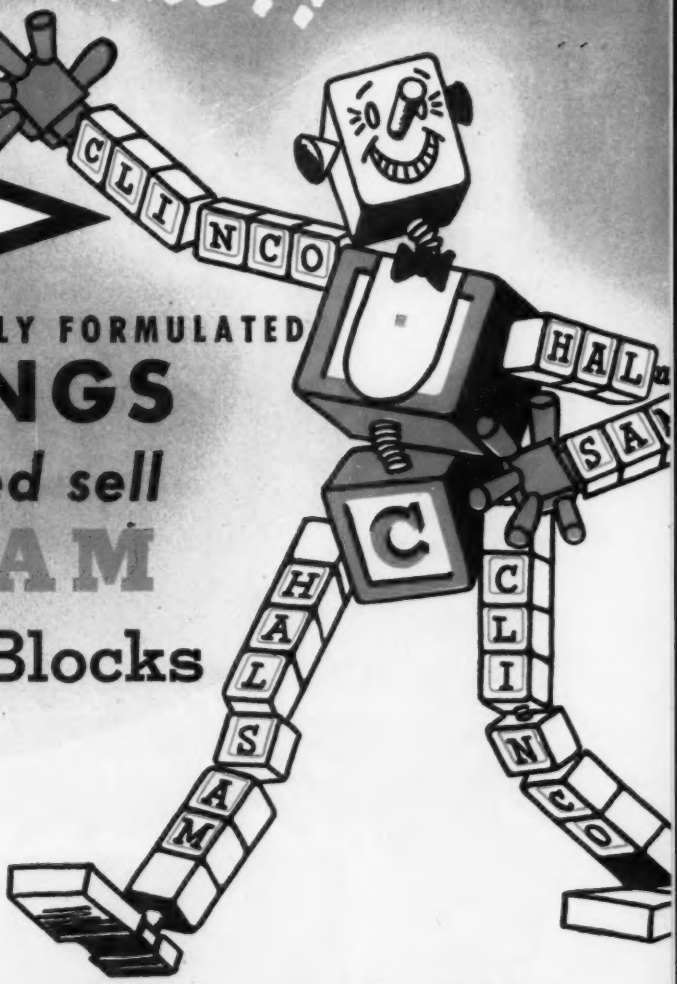
NON-TOXIC SPECIALLY FORMULATED

COATINGS

have helped sell

HALSAM

Alphabet Blocks



31st
YEAR
1928-1959

For nearly a third of a century HALSAM PRODUCTS COMPANY, Chicago, the world's leading manufacturer of Alphabet Blocks, Dominoes, Anagrams and Checkers has depended on CLINCO specially formulated non-toxic COATINGS.

HALSAM operates a spotless, modern, highly mechanized plant and enjoys a well-deserved and excellent international reputation. CLINCO is proud of its long association with HALSAM, attributable to delivery of the finest quality finishes and maximum service.

THE CLINTON COMPANY

PIONEERING QUALITY INDUSTRIAL FINISHES SINCE 1928

1220 ELSTON AVE. • CHICAGO 22, ILL. • Phone: ARmitage 6-7760

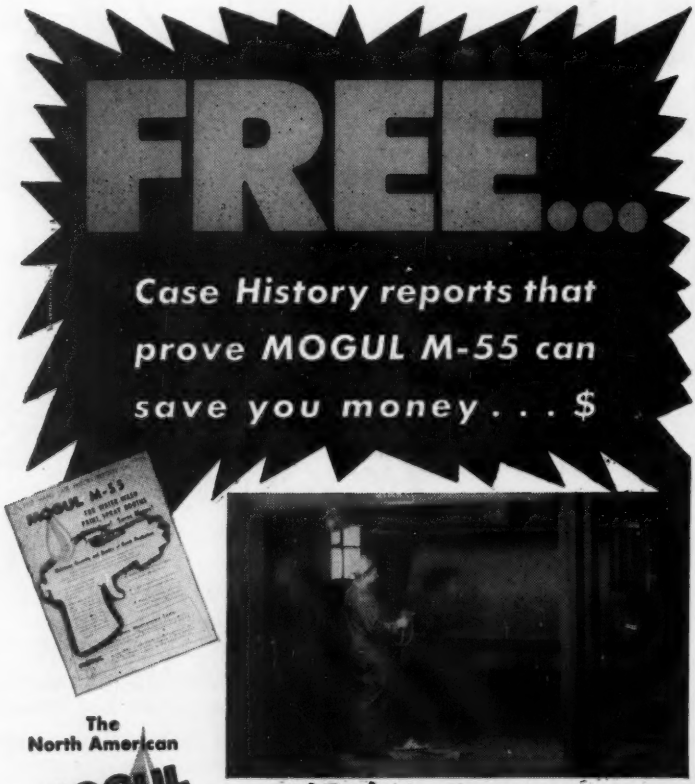
potential. The higher the voltage (cell potential), the more rapid the rate of stripping and corrosion. Since electroplated metals normally do not bridge defects, a few isolated spots corrode rapidly because all the cell potential is concentrated at these defective spots.

When a finely cracked chromium is deposited on top of the crack-free chromium, there results a very low rate of corrosion—or none at all. This is because the many cracks over the entire surface disperse the cell action over a large area. Therefore, there is a substantial reduction of the current density at each of these many individual openings. This keeps the current density below the value corresponding to the critical potential required for the anodic perforation of the underlying metals.

While a single thick layer of crack-free chromium upgrades corrosion protection significantly, a second deposit of finely cracked chromium has been found to provide even greater benefits — extending the CASS test performance with 0.1 mil of chromium to approximately 200 hours. Corrodkote tests, normally stopped after one cycle, had to be run six complete 16-hour cycles to reach the same degree of failure.

Tests on Production Parts

The following tests were made



The North American MOGUL Products Company

Standard Building
Cleveland 13, Ohio

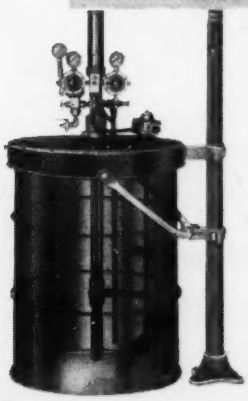
. . . Write for literature and actual case history reports on results.

NEW... MOGUL M-55 liquid treatment for water wash paint spray booths is SAFE to use, will not harm personnel. Provides an excellent paint blanket . . . protects equipment and keeps your water circulation system at top operating efficiency. A 60 day trial offer will prove MOGUL M-55 results in your own operations.

For more data circle 342 on Postpaid Card

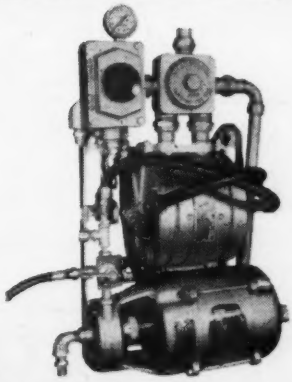
Here's why YOU *should use* SPEE-FLO HOT SPRAY SYSTEMS

One coat replaces two . . . improved coverage . . . better build . . . faster drying . . . no holidays . . . longer lasting, smoother finish . . . savings in maintenance and materials.



SPEE-FLO PAINT PUMPS

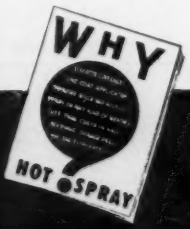
- OPERATE from original container.
- DIVORCED ACTION . . . air motor sealed off from pump.
- BUNG OR DRUM-COVER MOUNT.
- AIR MOTOR MIXER
- UP TO 3 GPM.
- DOUBLE-ACTING . . . 2-to-1 ratio delivers on both strokes.
- FAST CLEANOUT



SPEE-FLO HOT SPRAY HEATERS

- SIMPLE . . . turn them on, ready in 5 minutes. Turn them off . . . exclusive construction eliminates daily cleanout.
- EFFICIENT . . . full heating range, 90-180°F. Easy, accurate control . . . coil-less design prevents clogging.
- PROVED . . . local distributors and trained Spee-Flo engineers give on-the-job demonstrations . . . let you evaluate them on your own job.

WRITE FOR FREE BOOKLET



SPEE-FLO

6614 HARRISBURG • HOUSTON 11, TEXAS

For more data circle 343 on Postpaid Card

on actual automobile production parts, using both Corrodkote and CASS tests.

Summary of Test Results

While improvements in corrosion resistance may be obtained by

Table I

Basis Metal: Steel Parts (Automobile Grille Section)

Method of Test: CASS Test

Part	Copper	Nickel	Total Undercoat	Chromium	CASS Test Hours	Corrosion A.S.T.M. Rating	Corrosion Percentage
A	0.4 mil	0.8 mil	1.2 mils	0.01 mil Ordinary	48	2	10-25%
B	0.4 mil	0.8 mil	1.2 mils	0.20 mil 50/50 Duplex	325	9	less than 0.1%

Table II

Basis Metal: Die Cast Zinc (Automobile Door Handle)

Nominal Undercoat: 0.4 mil copper plus 0.7 mil nickel.

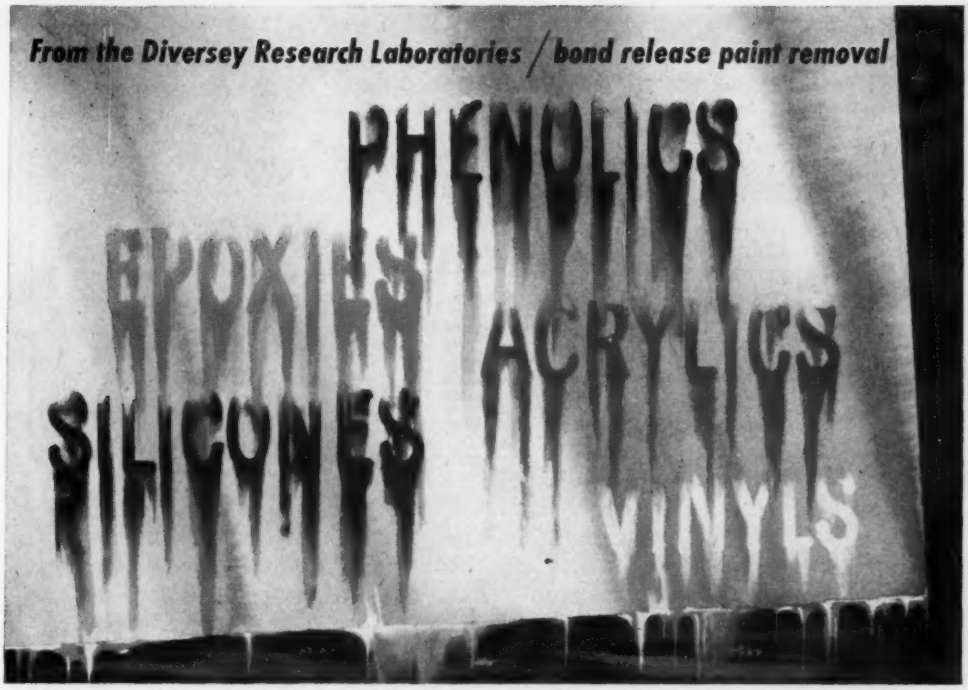
Part No.	Chromium	Test Method	Test Period	A.S.T.M. Rating	Percentage Corrosion
A	Ordinary	Corrodkote	1 Cycle	7	0.25-0.5%
B	Ordinary	CASS	16 Hours	7	0.25-0.5%
C	Duplex	Corrodkote	2 Cycles	9	less than 0.1%
D	Duplex	CASS	32 Hours	9	less than 0.1%

Table III

Basis Metal: Steel (Ventilator Window Frame)

Nominal Undercoat: 0.8 mil copper plus 0.5 mil nickel.

Part No.	Chromium	Test Method	Test Period	A.S.T.M. Rating	Percentage Corrosion
A	Ordinary	Corrodkote	1 Cycle	4	2.5-5.0%
B	Ordinary	CASS	16 Hours	5	1.0-2.5%
C	Duplex	Corrodkote	3 Cycles	10	0
D	Duplex	CASS	32 Hours	9	less than 0.1%



To be sure of the right Paint Stripper for any finish . . . talk to DIVERSEY

. . . Whether your job involves stripping epoxies, alkyds, vinyls or other modern organic finishes . . . there is a stripper developed by the Diversey Research Laboratories that will produce a clean surface quickly and economically.

Each DIVERSTRIP paint stripper is formulated for (1) the type of metal or alloy to be stripped, (2) the method of application and (3) the type of finish to be removed. With this complete line to select from, you're always sure of using the fastest, most efficient and economical stripper for your job.

Write now for your copy of Diversey's Paint Stripper Guide. For all your metal stripping, cleaning and surface preparation needs, consult your Diversey D-Man. He has the training and technical experience to solve your problems, cut your costs. The Diversey Corporation, 1820 Roscoe Street, Chicago 13, Illinois.

DIVERSEY.®

For more data circle 344 on Postpaid Card

Table IV

Basis Metal: Steel (Bumper Section)

Nominal Undercoat: 1.0 mil copper plus 0.8 mil nickel.

Part No.	Chromium	Test Method	Test Period	A.S.T.M. Rating	Percentage Corrosion
A	Ordinary	Corrodkote	1 Cycle	5	1.0-2.5%
B	Ordinary	CASS	16 Hours	6	0.5-1.0%
C	Duplex	Corrodkote	3 Cycles	9	less than 0.1%
D	Duplex	CASS	48 Hours	10	0

the use of single thick chromium deposits, a great improvement is obtained by the use of heavy Duplex Chromium deposits involving first CF-520 and then Special SRHS CR-110.

The use of the Duplex Chromium deposits has proven successful on steel and zinc basis metals.

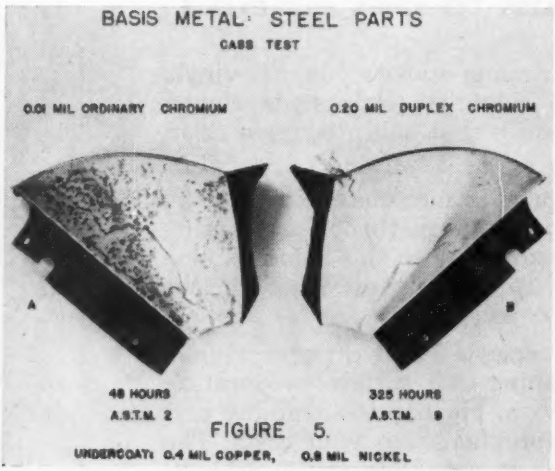


Fig. 5—Test samples showing results of CASS test on steel parts plated with copper, nickel, and two different types of chromium. (Figs. 3, 4, 5 courtesy Metal & Thermit Corp.)

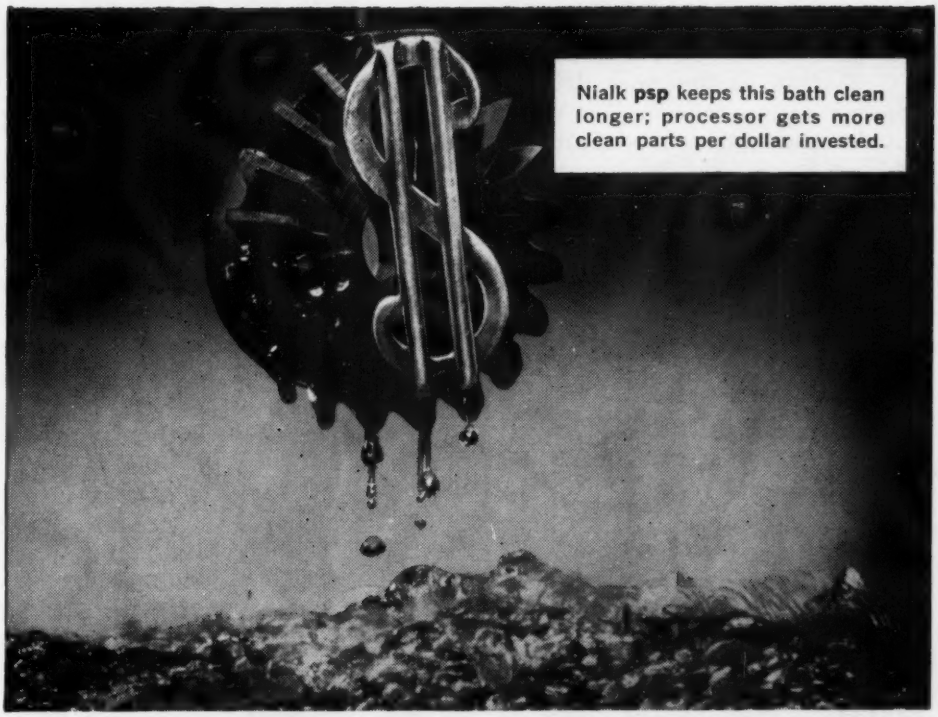
The results obtained are independent of the testing procedure. In other words, quality improvement averages as great with CASS test as Corrodkote test and vice versa.

Duplex Chromium in Production

In the Duplex Chromium plating installations now running, the procedure is to plate a minimum of four minutes with CF-520 chromium at an average current density of 1½ amp./sq. in., 8 volts, and 120 deg. F. tank temperature. This is followed by a reclaim rinse and one water rinse. Parts are then plated another five minutes in SRHS Special CR-110 solution at approximately the same current and tank temperature, at 7½ to 8 volts.

This procedure puts on about 0.1 mil total chromium in the average current density areas, and with far greater thickness in the low current density areas than previously possible, and without burning in the high current density areas.

If the equipment available does not have enough length for a second chromium tank a separate tank can be used for the SRHS Special CR-



HOW TO MAKE YOUR $'S DEGREASE MORE PARTS

You make no profit on the time you spend cleaning out a degreaser.

You cut another slice off the top of profits whenever you have to add fresh stabilizer to your trichlorethylene bath.

When a bath goes "sour" while you're processing, you lose still more time and money.

psp is the simple answer

Trichlor is trichlor the world over; it's the *stabilizer* in your trichlor that can make the difference.

The difference in Nialk® stabilizer is *psp* —permanent staying power.

Nialk stabilizer is neutral. It cannot react with acids to form corrosive salts. Still it "accepts" acids and renders them completely harmless. The Nialk stabilizer will not stain or discolor your parts or allow your bath to become "sour."

You never add fresh stabilizer to a Nialk bath. The stabilizer stays potent no matter how long you use it. It's insoluble in water so you don't lose it during steam distillation or in the water separator of your degreaser.

Nialk frees your bath of those degradation products which settle on coils and cut down heat transfer. Cleanouts are widely spaced and quickly finished.

If your profit picture could use a little brightening, you'll want to know more about the whole subject of trichlor stabilizers. Send for our Bulletin 70 for the complete story.

HOOKER CHEMICAL CORPORATION
1407 UNION STREET, NIAGARA FALLS, N. Y.

Sales Offices: Chicago Detroit Los Angeles New York Niagara Falls Philadelphia Tacoma Worcester, Mass.
In Canada: Hooker Chemicals Limited, North Vancouver, B. C.

HOOKER CHEMICALS PLASTICS

For more data circle 345 on Postpaid Card

110 solution. If the work dries between these operations, it is recommended that the parts be cleaned by soaking for 3 to 5 minutes at 180 deg. F. without current in an alkaline electro-cleaner. This is followed by two cold running water rinses, and the final chromium plating operation.

With ordinary baths, on parts such as automobile bumpers, 150 a.s.f. is the usual maximum current density permissible without burning of the chromium. With CF-520, platers have run as high as 420 amp./sq. in. with no observable burning. However, it is also possible to plate successfully as low as 120 a.s.f. This unusually wide bright plating range makes it practical to produce bright deposits in recessed areas without burning at high current density points.

An additional production advantage of the Duplex Chromium process is the ability to re-plate rejects. And, because of the excellent throwing power of CF-520 for the chromium undercoat, auxiliary anodes rarely are required.

In one production installation, a number of automatic machines used for plating exterior zinc die castings have been converted to CF-520 as a means of achieving increased chromium thickness specifica-

At Last...

Positive Protection Against

Paint Spray

with the NEW

FLEX-A-PRENE®

PAINT MASK

New Efficiency

The sensational new FLEX-A-PRENE Paint Mask keeps out paint pigments and solvents with amazing efficiency, yet it's light (just 1 ounce), comfortable and so easy to talk and breathe through you hardly know you're wearing it.

New Economy

Flex-A-Prene's low first cost is only part of the story. Most important savings come from its endurance in service and time saved through less frequent filter replacements. You can expect at least 100 hours of exposure before filter replacement is necessary.

Sample: $1.50 postpaid

(INDUSTRIAL PRICE ONLY)

FLEXO Products, Inc.

Westlake, Ohio

For more data circle 346 on Postpaid Card

Flash Preview of another new...

ABBEY-Matic

for the Western Electric Company, leading manufacturer of electrical and electronic communications equipment.

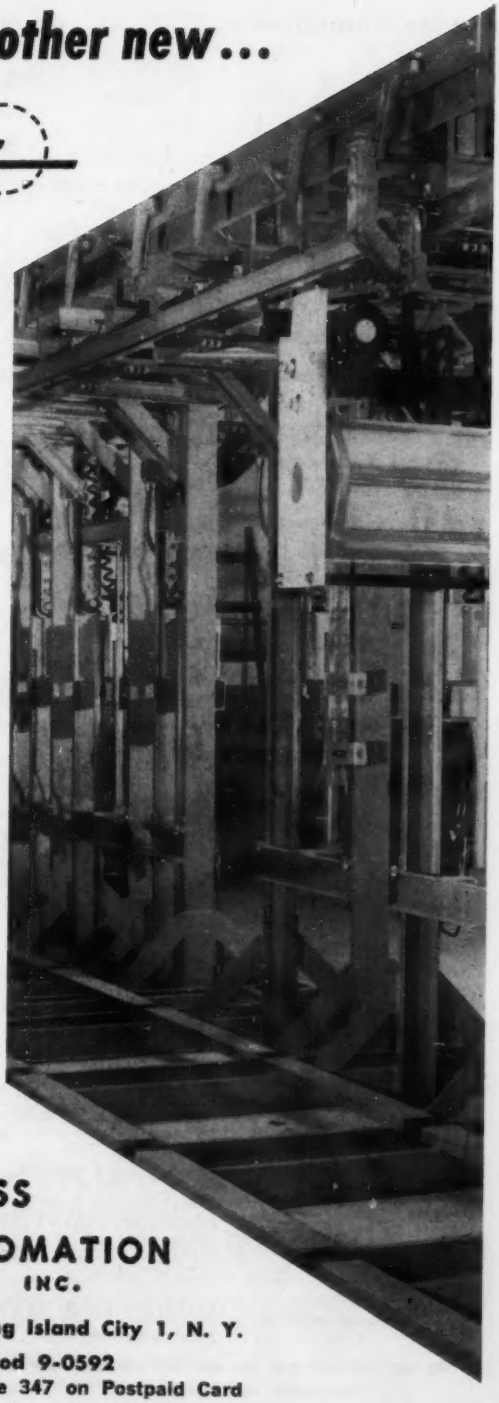
Only ABBEY-Matic's (patented) exclusive operating principles have the essentials required for this plant's exacting program of metal parts finishing.

Total Automation — ABBEY-Matic movements and timing are 100% automated for highest plating productivity-per-man-hour potentials of any system.

Ultra-Flexible — ABBEY-Matic is first to break barriers of fixed sequence and synchronization—adapts to changing requirements without complication.

Multi-Cycle Selection—ABBEY-Matic Key-Card Dispatch pilots carriers unerringly throughout cycles. 100% electro-mechanically fail-safe. No "dialing" mistakes.

Watch This Space for complete operating features and reasons why ABBEY-Matic is the only System suitable for this leading manufacturer . . . and for **you.** Inquire today!



Exclusive Distributor: ENTHONE, Inc., New Haven, Conn., a Subsidiary of American Smelting & Refining Company.

REPRESENTATIVES:

Austin F. Fletcher, Inc., Barlow Rd., R.D. 6, Binghamton, New York

R. O. Hull & Co., Inc., 1300 Parsons Ct., Cleveland 16, Ohio

R. O. Hull & Co., 3136 Hilton St., Ferndale, Mich.

Ross Industries, Inc., 5890 Commonwealth Ave., Detroit 8, Mich.

Ardco, Inc., 5000 W. 73 St., Chicago 38, Ill.

Nicromatic, Ltd., 20 Drummond St., Toronto 14, Ont., Can.

Ask your dealer or write to:

ABBEY PROCESS AUTOMATION INC.

37-01 48th Ave., Long Island City 1, N. Y.

RAvenswood 9-0592

For more data circle 347 on Postpaid Card

tions. Second chromium tanks for CR-110 were installed. The plating time in each bath varies but in no case does it exceed 10 minutes total in both baths.

In some machines these changes are quite easy to accomplish by simply removing the dryer from the machine, and utilizing this space for the additional CR-110 tank. The dryer is then set up on the conveyor line that removes the parts from the machine in the Inspection Department.

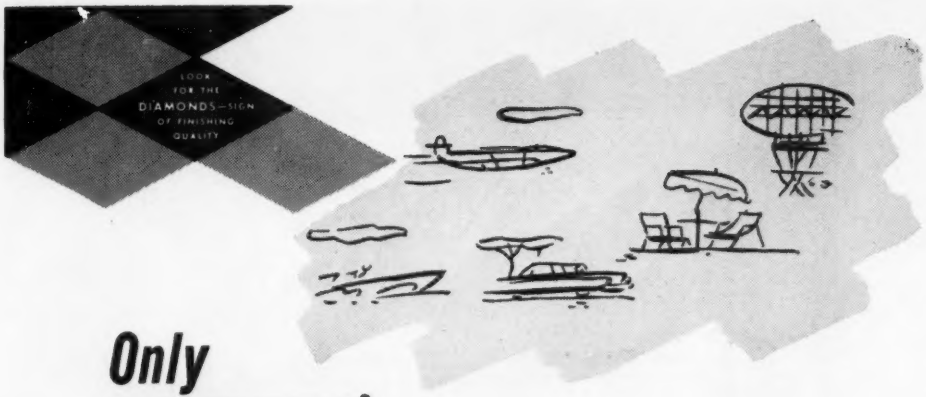
★ ★ ★

Electroforming of Linear Accelerator Structures. By J. A. Pope, Stanford University, for the Office of Naval Research.

Techniques and equipment used at Stanford University for electroforming copper linear accelerator structures are described. The author states that the electroforming method is preferred over mechanical fabrication techniques (such as shrink - fitting copper discs in copper pipes) because it allows baking the structure at high temperatures for outgassing and sealing off the vacuum - tight accelerator tube.

To obtain a copy of this publication, request PB 131944 from OTS, U. S. Department of Commerce, Washington 25, D. C. 22 pages. Price, 75 cents.

STEP UP YOUR
WASHING
COATING
RINSING
with
SPRAYING SYSTEMS CO.
Controlled Flow*
SPRAY NOZZLES
*Once you select a given type and size of Spraying Systems spray nozzle, you can be sure that ALL nozzles like it will perform exactly the same. Pattern, impact, volume and distribution will be identical. To gain the important advantages of "controlled-flow" spraying specify Spraying Systems spray nozzles when you buy.
Write for Catalog 24
ADJUSTABLE JOINTS—For fast easy positioning and re-positioning of nozzles relative to work. Complete choice from ¼" to 2½" pipe size connections.
Write for Bulletin 97
SPRAYING SYSTEMS CO.
3229 Randolph Street • Bellwood, Illinois
For more data circle 348 on Postpaid Card



Only IRIDITE® PROCESS ENGINEERED Chromate Conversion Coatings

Give you 5 additional benefits for Corrosion Protection—Paint Base—Decorative Finishing

1. A COMPLETE PROCESS ENGINEERED LINE

Developed for specific applications, there is an Iridite to provide the finish you desire, fit the equipment you have available and give the performance you require. Most Iridite coatings meet rigid military and civilian specifications.

2. EXPERIENCED TECHNICAL SERVICE

Our large field engineering staff is thoroughly familiar with chromate conversion coatings and related finishing operations. They'll help you check every step in your finishing operation to make sure you're getting the best possible finish on your products.

3. PRODUCT AVAILABILITY

Warehouses located in strategic industrial areas enable us to provide you with fast, economical delivery on any Iridite.

4. ECONOMY

The superior performance of Iridite provides low final cost by extending operating life and lowering maintenance costs. In addition, Iridite gives you a finish that adds considerably to the value of your product. There's an Iridite to meet every cost and performance requirement.

5. RESEARCH AND DEVELOPMENT FACILITIES

If you have an unusual application, we will gladly work with you. Our entire staff of experienced engineers and chemists, and our completely equipped facilities are at your service.

If you are using chromate conversion coatings to finish zinc, cadmium, aluminum, magnesium, silver, copper, brass or bronze — consider the above benefits of Iridite. For complete information, contact your Allied Field Engineer. He's listed under "Plating Supplies" in the yellow pages. Or, write for FREE TECHNICAL DATA FILE.

Allied Research Products, Inc.

4004-06 EAST MONUMENT STREET • BALTIMORE 5, MARYLAND
BRANCH PLANT: 400 MIDLAND AVENUE • DETROIT 3, MICHIGAN
West Coast Licensee for Process Chemicals: L. H. Butcher Co.

Chemical and Electrochemical Processes, Anodes, Rectifiers Equipment, and Supplies for Metal Finishing

IRIDITE® Chromate Coatings	IRILAC™ Clear Coatings	ISOBRITE® Plating Brighteners	ARP® Chemicals & Supplies	WAGNER Line of Equipment

For more data circle 349 on Postpaid Card

PITTSBURGH INDUSTRIAL FINISHES

PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS • FIBER GLASS

PITTSBURGH PLATE GLASS C

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

NE COAT DOES IT when it's . . .

DURACRON

Cut finishing costs on refrigerators . . .
with no sacrifice in quality

Why continue with multiple coats when One-coat DURACRON is as good or better for refrigerators? With this amazing thermo-setting acrylic enamel, you'll cut finishing costs substantially—with no sacrifice in quality. DURACRON can be applied at higher line speeds. Its fast set reduces the number of rejects caused by dirt, sags and runs. Its unusual hardness lessens danger of marring or abrasion in assembly.

• **One-coat DURACRON** actually upgrades performance in service, too. Its exceptional color retention, hardness and resistance to the corrosive effects of stains, grease, detergents and other chemicals are superior to conventional two-coat finishes.

MAIL THIS COUPON TODAY! →

• Write for free brochure which explains in detail how DURACRON One-coat Enamel cuts finishing costs without sacrificing quality.

COMPANY

Pittsburgh Plate Glass Company, Industrial Finishes Division, 1 Gateway Center, Pittsburgh, Pa.

Gentlemen: Please send me copy of your free booklet on new DURACRON Acrylic Enamel.

Name_____

Address_____

City_____ County_____ State_____

Name of Company_____

For more data cricle 350 on Postpaid Card

Notes and Quotes from the A. E. S. Annual Convention and Industrial Finishing Exposition

Photos, comments, and recorded interviews from the recent A. E. S. functions in Detroit . . .

Wright W. Wilson, convention chairman, calls the A. E. S. Golden Jubilee Convention to order. With Mr. Wilson are other participants in the opening ceremony as well as A. E. S. National Officers and almost all the living past national presidents of the society.

Earle W. Couch, Lea Mfg. Co., president of the Metal Finishing Suppliers' Assn., Inc., reported to the membership at the M. F. S. A. annual luncheon and meeting. Seated at the speakers' table (left to right) are: John E. Trumbour, "Metal Finishing," trustee; Dee F. Mosher, Lea-Michigan, Inc., 1959 liaison representative; Dr. H. L. Kellner, Lea-Ronal, Inc., 3rd vice president; H. D. McLeese, Metal & Thermit Corp., trustee; S. M. Goble, Federated Metals Div., ASARCO, trustee; R. M. Norton, Hanson-Van Winkle-Munning Co., trustee; Ezra A. Blount, PRODUCTS FINISHING, treasurer; Ray F. Ledford, Chemray Corp.,

A. E. S. President Herberth E. Head (right) presents to Dr. William Blum his citation and honorarium as the winner of the first A. E. S. Scientific Achievement Award.

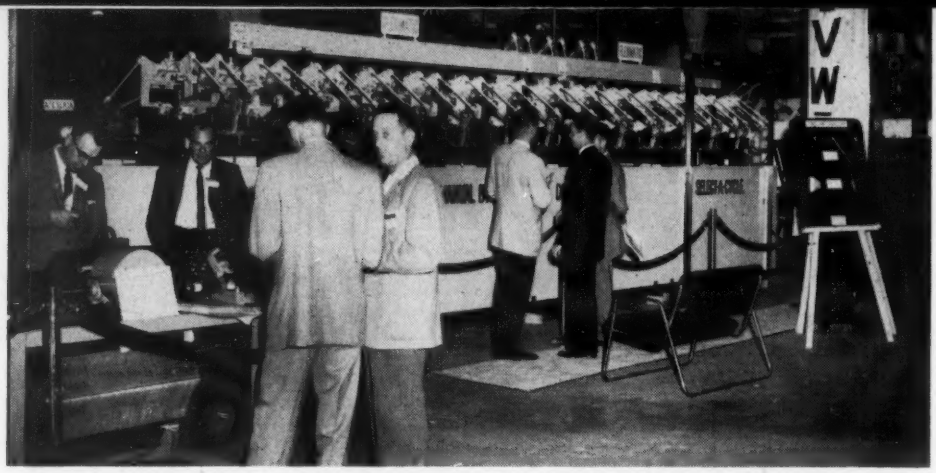
A. E. S. President Herberth E. Head cuts the ribbon to open the Industrial Finishing Exposition. With Mr. Head are Past President William M. Phillips, Past President and Educational Chairman Walter L. Pinner, Exposition Vice Chairman Manuel Ben, A. E. S. Executive Secretary John P. Nichols, and Exposition Chairman Howard J. McAleer.

(Photos by PRODUCTS FINISHING)

Second winner of the A. E. S. Scientific Achievement Award was Dr. A. Kenneth Graham of Graham, Savage & Associates, (left). Award was announced by Dr. Abner Brenner, National Bureau of Standards (right), chairman of the Selection Committee. Dr. Graham will deliver the second William Blum Lecture at the A. E. S. Convention in Los Angeles in 1960.

$1,000,000 in cash was included in the display at one booth in the Exposition.

president-elect; J. G. Carrique, Alloycraft, Ltd., 2nd vice president; A. P. Munning, Munning & Munning, Inc., executive secretary; R. D. Wysong, Studebaker-Packard Corp., A. E. S. president-elect; Fred P. Green, Crown Rheostat & Supply Co., 1st vice president; Dr. M. M. Beckwith, Harshaw Chemical Co., past president; L. A. Davies, Davies Supply & Mfg. Co., trustee; C. C. Helmle, Enthone, Inc., trustee; A. B. Hoefer, Frederic B. Stevens, Inc., trustee; R. M. Burford, Pennsalt Chemicals Corp., golf chairman; H. J. MacCracken, Northwest Chemical Co., trustee; E. L. Combs, Diamond Alkali Co., trustee.



Largest automatic plating machine on exhibit was the Hanson-Van Winkle-Munning Fleximatic.

PRODUCTS FINISHING extends sincere thanks to the following companies who had a part in making the "Gay 90's Plating Room" a successful exhibit through loan of equipment or photographs, or through helpful suggestions:

Acme Manufacturing Company
John H. Feeley & Sons, Ltd.
Hanson-Van Winkle-Munning Company
Metal & Thermit Corporation
Frederic B. Stevens, Inc.
The Udylite Corporation

A. E. S. President Herberth E. Head operates the "Gay 90's Plating Room," a part of the PRODUCTS FINISHING exhibit, featuring plating equipment of "yesterday."

Dr. William Blum: Education is Most Important Problem

Dr. William Blum presented the first William Blum Lecture as the first paper in the educational sessions at the A. E. S. Convention. Dr. Blum said that education is the most important problem facing the electroplating industry. He cited ways to improve education so that plating can contribute more efficiently to the health and welfare of everyone.

Dr. William Blum presents award lecture

For people in the plating industry Dr. Blum recommended evening classes, correspondence courses, reading of trade journals and books, refresher courses for older platers.

Noting that every unsuccessful application of plating makes more difficult its proper use, Dr. Blum proposed a public relations program to improve public acceptance of plating. He recommended increased use of specifications and "quality marks" such as are used on silverware; production of electroplated coatings of such high quality that the public will accept and desire plated products; a program to discover causes of and remedies for failure of nickel-chromium plates; exhibits in museums and public displays; preparation of articles that will show the public the uses and value of plating.

Dr. A. Kenneth Graham Awarded Highest Scientific Honor of American Electroplaters' Society

The American Electroplaters' Society recently announced the second winner of its Scientific Achievement Award: Dr. A. Kenneth Graham, Jenkintown, Pennsylvania, president of Graham, Savage & Associates.

Dr. Abner Brenner of the National Bureau of Standards, chairman of the selection committee, introduced Dr. Graham as the second winner of the award during the opening session of the A. E. S. national convention, held in Detroit, Michigan.

Dr. Graham earned selection by his accomplishments in advancing the theory and practice of electroplating, metal finishing and allied arts; in raising the quality of its processes and products and in enhancing the dignity and status of the profession.

Dr. Graham will deliver the second "William Blum Lecture" at the A.E.S.'s Annual Convention to be held in Los Angeles in 1960. He will receive a scroll, a 500-dollar honorarium and other honors.

A. E. S. Elects New Officers, Chooses Convention Sites

Delegates to the annual national convention of the American Electroplaters' Society elected officers for the coming year and selected sites for coming conventions. The con-

Ralph D. Wysong

Manuel Ben

vention this year was held in Detroit, Michigan, during the week of June 14-19.

Ralph D. Wysong of Studebaker-Packard Corporation is now president of the 58-branch organization of platers and suppliers. He succeeds Herberth E. Head, Chrysler Corporation, who served as president during the Society's fiftieth anniversary year. Other officers elected to the next higher position include Dr. W. Andrew Wesley, International Nickel Co., Inc., first vice president; Chester G. Borlet, Grand Rapids Brass Co., second vice president. Manual Ben, General Motors Corporation, is the new man on the executive board—third vice president.

Convention sites for future conventions selected by the delegates include St. Louis, 1964, and New York City, 1965.

1960 A. E. S. CONVENTION,
Los Angeles, California,
July 24 to 28
Hotel Statler

M. F. S. A. Elects Ledford President

Ray F. Ledford

New president of the Metal Finishing Suppliers' Association, Inc., is Raymond F. Ledford. Mr. Ledford has held various positions in the finishing industry since his graduation from Western Michigan College, having been associated with Kalamazoo Plating Co., Hanson-Van Winkle-Munning Co., Sunbeam Corp., and Industrial Filter & Pump Mfg. Co. He now heads his own company, Chemray Corporation.

The Metal Finishing Suppliers' Association, Inc., is the only international trade association of suppliers to the finishing industry. It has members in both the United States and Canada.

N.A.M.F. Elects Officers

A. T. Leonard

A. T. Leonard, president of Superior Plating, Inc., Minneapolis, was elected president of the National Association of Metal Finishers, at the N.A.M.F. annual convention recently held in Detroit.

Mr. Leonard succeeds George

W. Taylor, president of Production Plating Co., Adel, Ga., as head of the N.A.M.F.

Robert L. Giesel, president of Adolph Plating, Inc., Chicago, was elected first vice president, while Edward N. Marlette, president of Marlette Plating Co., Chicago, was named second vice president.

Re-elected to his fifth term as secretary-treasurer was Fank Kaiser, president of Long Island Mechanical Plating Co., Inc., Woodside, L. I., N. Y. Sal Novelli, partner of Service Plating Co., Brooklyn, N. Y., was named assistant secretary-treasurer.

Two new directors were elected. They are James E. Cogan, Jr., president of Globe Electroplating Co., Philadelphia, and Charles T. Smith, works manager of Danbury Metal Finishing Co., Danbury, Connecticut.

The N.A.M.F. is an association of owners and operators of plants which provide polishing, anodizing, chrome plating and other services to the automotive, aircraft and other industries.

★ ★ ★ ★ ★

The PF Interview: The editor of PRODUCTS FINISHING asks prominent people at the A.E.S. Convention and Exposition for comments on topics of current interest.

Dr. S. Wernick: Finishing in Europe is More Meticulous

Dr. Wernick, would you contrast the organization and function of the Institute of Metal Finishing and the American Electroplaters' Society?

Dr. Wernick: The aims of the I.M.F. are similar to those of the A.E.S. Both organizations are primarily interested in the dissemination of information on technical aspects of electrodeposition and metal finishing. The I.M.F. was at one time concerned exclusively with electrodeposition, and its name then was the Electrodepositors Technical Society. It changed its name to I.M.F. because it was found that a considerable portion of the membership was not only interested in electroplating but also in other coating methods, and particularly organic finishing. Some years ago we formed an organic finishing group.

I think we may claim that perhaps in this way we have inspired the A.E.S. to do something along similar lines. It is particularly gratifying to the British delegation at the Convention to find that there was quite a bit of emphasis on organic finishing.

Dr. Wernick, I believe that you have been honorary secretary of I.M.F. for quite a number of years.

Dr. Wernick: Speaking of institutes, I suppose that I, myself, am almost an institution, in that I have acted as honorary secretary of our institute since 1927. I was president of I.M.F. for two years, in 1945-47.

Our setup is different from the A.E.S. in that we have no paid executives. Our Executive Committee consists of the president, the honorary secretary, the honorary treasurer, the immediate past president, and the chairman of the finance committee.

Would you like to comment on the paper you presented before the A.E.S. Convention?

Dr. Wernick: As you will recall, the paper was on the subject of pre-finished metal. My object was to draw attention to this new aspect of metal finishing, which has increased in recent years, but may not be receiving the recognition that it deserves. The use of pre-plated metals, pre-painted metals, and pre-plastic coated metals, in sheet and strip form, is a comparatively new development that has only occurred over the last few years, but it has made considerable impact on manufacturing processes of all kinds. Possibly we may be on the verge of a new era in metal finishing technique. The use of pre-finished metal may result in appreciable reduction in the amount of metal finishing done on fabricated articles.

There are many advantages in the use of pre-finished metals. I have emphasized these in my paper. My object was to bring this new development to the attention of the convention. One of the functions of an International Conference should be to draw some attention to new trends. I do not think there is any cause to be alarmed by this development, because I think that whenever a new process begins, it doesn't automatically mean that the processes which it replaces are going to go into oblivion. Usually it turns out that with increased production, both the new and the old methods benefit.

There are, of course, two general problems in connection with the use of pre-finished metal: edges are not coated and there is surface damage during fabrication.

Dr. Wernick: The edge problem is a real one, and a great deal of work has been done to overcome the difficulty. A new technique has been built up for treatment of such raw material, and I have dealt with this in my paper. With regard to damage of the finished surface during fabrication, this is no more of a problem than you will encounter in other metal finishing processes. Normally such damage is not very significant.

Dr. Wernick, have you noticed any significant trends in the finishing industry in the United States?

(Left to right): Dr. S. Wernick, honorary secretary of the Institute of Metal Finishing, London; Dr. T. P. Hoar, president of the I. M. F.; Ezra A. Blount, PRODUCTS FINISHING.

Dr. Wernick: All of the foreign visitors have noted the emphasis being placed here on the durability of finishes. This has resulted from dissatisfaction with plated finishes. This has affected the automotive industry, perhaps as much in Europe as it has in this country.

I think that it must be accepted that the quality of metal finishing, on the whole, has been higher in Europe than in the U.S. This is not because Americans are backward in any way in producing quality finishes; it is simply the result of a difference in approach.

In England, and in most European countries, finishing has been considered a very important aspect of the manufacture of any article, especially expensive articles such as motor cars. We consider that a motor car is a prized possession, not one which will be replaced in a year or two. Therefore, it must last and it must stand up to the rigors of difficult climates. It must also have good sales appeal.

That is the reason that we have taken the approach of the "jewelry finish" as opposed to the "curb-side finish," which has been, rather, the approach of American finishing technicians. I am not certain that the "curb-side" approach is not sometimes the correct one; for example, when one finishes a bumper which will only be viewed from a 6-foot distance, it doesn't seem necessary to have such a high degree of finish as would be desirable if one inspected such an article from a distance of a few inches.

Do you think this is just a matter of appearance or do you think that your finishes are any more durable than ours?

Dr. Wernick: I believe that European finishes are, in general, more durable. This not only applies to plating, but also to paint finishes.

Is this true because you use copper and nickel and chromium, and buff the intermediate layers?

Dr. Wernick: No; in general we don't use copper. Usually we use nickel directly. In fact it has been British practice to use nickel directly on steel as opposed to the copper-buff-nickel technique, which has been used in the U.S. The point is that the preparation of the metal surface has been more meticulous in England. We have always had a high polish on the steel. That brings benefits in appearance and also improved protection.

Turning to paint finishes on cars: as is known, a considerable proportion of British cars are finished by the Roto-Dip method. The body of the car is immersed during the cleaning, phosphatizing, chromating, and priming operations successively and rotated in those solutions. Thus every part of the body—inside and outside—is treated efficiently.

British cars which have been treated by the Roto-Dip process, or by the "slipper-bath" technique, which is similar, and which means that the under part of the body is taken through the various treatment solutions, have the under parts or the entire body correctly treated. All this adds up to more care having been taken on European cars than on American.

Dr. Wernick, what is your main impression of this International Conference?

Dr. Wernick: Personally, I feel very gratified at the obvious success

of this 5th International Conference. This is due, in very large measure, to the immense amount of enthusiastic work put in by Walter L. Pinner and his associates. I, personally, know something of the effort which has been involved, and I think that Mr. Pinner must be very gratified at the outcome of all this effort. We, on our side of the Atlantic, worked hard to support him in every way.

However, in a spirit of quite friendly criticism, which I am sure Walter would be the first to accept, I would like to comment on one aspect of the meeting. There is no doubt that, in our enthusiasm to have as big a coverage as we could, there were, perhaps, too many papers. This resulted in two simultaneous sessions. We, of the I.M.F., made exactly the same mistake at our last conference in Brighton.

One of the points that might be considered for future conferences of this kind is that an effort should be made somehow or other to have papers published in advance and circulated to delegates. This would enormously help not only delegates, who would have a more complete idea of the subjects than could be gained by reading the abstracts, but also it would have helped the authors in their presentations.

Another minor point that the foreign delegates would have appreciated, would have been a list of all delegates to the convention. Thus foreign delegates, receiving such a list immediately upon arrival, would have been able to contact, more easily, the delegates that they wished to meet. I appreciate that these things can not always be arranged without a great deal of trouble but perhaps in this instance it would have been well worth the effort. Incidentally, I cannot praise too highly the excellent transportation arrangements.

In the main, this has been a first class convention. It is the first truly International Conference that has been arranged by the A.E.S., and I would personally like to congratulate the society on the manner in which it has been conducted. Needless to say we, the visitors from abroad, have been overwhelmed by the kindness and hospitality which we received at every hand. I may say that it was no more than we expected — knowing our American friends from of old.

★ ★ ★

Robert H. Stone: Electrostatic hand gun finds best application in painting wire or tubular parts; brings benefits of electrostatic painting to smaller shops.

Mr. Stone, we have watched your demonstration of the hand-held electrostatic spray painting gun and we would appreciate your comments as to its application in industry, and any special or unusual applications being made of this new tool for applying paint.

Mr. Stone: The hand gun's main application seems to be on articles that are fabricated out of wire, rod, tubing, small cross-sectional-area extrusions, structural parts, and products of that nature. We find that the applications are being made not only in the field of high-quality finishes but also on articles where a lower quality of finish is satisfactory; for example, the boat trailer industry. A recent example of this application is the use of our hand gun by Peterson Brothers in Fort

Wayne. This customer has reported a substantial saving through the use of our equipment. It follows, from my general statements as to the type of work to which this hand gun is suitable, that it is useful in the manufacture of outdoor furniture, dinette furniture, T. V. stands, magazine racks.

Are there any limitations as to the type of finish that can be applied with this gun?

Mr. Stone: Yes, there is a definite limitation there. For example, metallic finishes are somewhat difficult to apply with the gun. Similarly, the hammer finishes are not easy to apply. This is about the only class of finish for which we require a special paint formulation in order to be able to apply the finish with the gun.

Can you apply metallic finishes with the regular Number 2 Process electrostatic spray equipment?

Mr. Stone: Yes. We have no difficulty at all with that equipment. The automatic atomizing equipment will handle almost any type of finish including porcelain enamel.

Would you care to comment on any other specific application for the No. 2 electrostatic spray hand gun?

Mr. Stone: The escape door hardware industry is another industry that has found the electrostatic hand gun advantageous. In this industry, a clear baking material is being applied over highly polished metal finishes on escutcheon plates, push bars for the door mechanisms.

It might be of interest to discuss the considerations you use in recommending to a customer the exact type of electrostatic spray equipment that he should install; for example, whether you recommend the No. 2 Process disk, the No. 2 Process bell or the electrostatic hand gun.

Mr. Stone: The first general rule in making recommendations to a customer is to consider the production volume. If production volume is sufficient, then obviously the automatic conveyorized electrostatic spray painting units are recommended. Since the basic process is the same with all types of equipment, it is possible for the customer to realize the same material saving with either fully-automatic or the manual equipment. His choice of one or the other should properly be based on the production volume in his plant. On some types of work, the hand gun is faster. However, generally we find that the hand gun's use is primarily in the smaller shop where the volume of work will not justify the automatic equipment.

Robert H. Stone (right) director of advertising and publicity, Ransburg Electro-Coating Corp., discusses the application of the Ransburg No. 2 Process electrostatic spray hand gun with Ezra A. Blount, editor of PRODUCTS FINISHING. Operator in background sprays with the hand gun to illustrate some of the points made by Mr. Stone.

Page 92

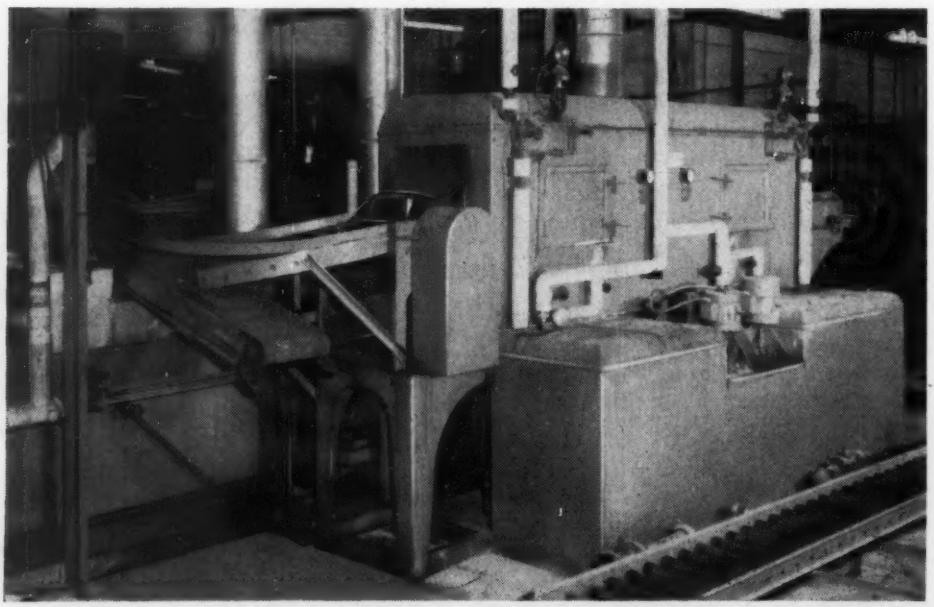
New Equipment, Materials, Processes

Polishing, Buffing, Degreasing, Cleaning, Barrel Finishing, Plating, Anodizing, Phosphatizing, Baking, Vacuum Metallizing, Chromate Coating, Paint Finishing, Waste Treatment

Industrial "Dishwasher"

An industrial "dishwasher" said to cut work stoppage and improve plant efficiency in the handling of small parts in bulk has been introduced by Frederic B. Stevens, Inc. Called the "Panhandler," this machine is equipped for taking parts in tote pans through a cycle of loading, unloading, washing of parts and pans, return of dry pans to loading station and delivery of refilled pans to proper departments.

A single operator can direct and



Stevens Panhandler: Automatic cleaning of parts in tote pans, plus tote pans themselves

monitor the Panhandler and its related equipment through all steps.

Small parts handled in steel tote pans usually have a lot of foreign matter mixed in with the products—cutting and threading oils, white drawing compound, steel burrs and chips. This debris must be washed from the parts. Burrs and steel particles, clinging with residual oils to parts being machined can jam the automatic feeds in slotting, threading and similar operations.

Literature is available from the manufacturer.

Manufacturer: Frederic B. Stevens, Inc., Detroit 16, Mich.

For more data circle 1 on Reader Service Card

★ ★ ★

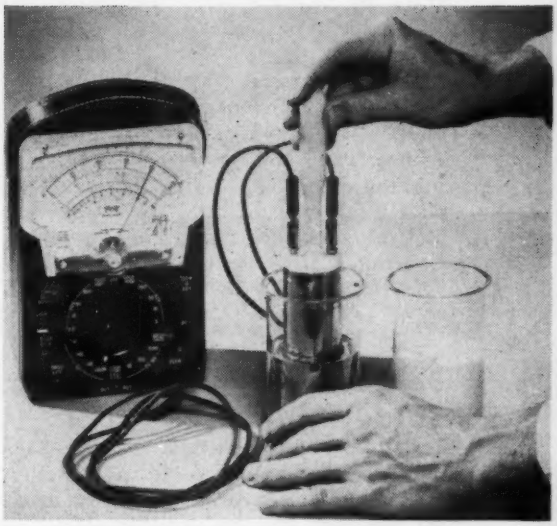
Tester for Electrostatically Applied Paints

Ransburg Electro-Coating Corp. has announced a new technique for improving the sprayability of coating materials for electrostatic application by Ransburg's No. 2 Process. Ransburg is also making available a test instrument that will prove useful to both paint manufacturers and users of No. 2 electrostatic spray, with either Ransburg's automatic or hand gun equipment.

The electric resistance of paint has a marked influence on how the paint performs in airless electrostatic spray equipment. Until now, this fact has been of little value.

Ransburg recently developed a standard method of measurement and established desired resistance values. This knowledge makes possible decided improvements in sprayability.

The new method amounts to measuring the paint's resistance to electric current flow, then adjusting it to Ransburg's established range by selection of proper solvents. Simplicity of this technique makes it of special importance to the paint user. It can be used in his paint mix room without a trained laboratory technician.



Electrical resistance of paint mixture is measured by Ransburg's new tester to determine if it is in proper range for best performance in airless electrostatic spray. Tests can be made at any viscosity and in any container.

Heretofore, selection of solvent has been based on a number of factors: compatibility with the binder, resin, and pigment, the desired viscosity, evaporation rate, film appearance, cost. Now the solvent's influence on the electrical resistance of the paint mixture should also be considered.

Ransburg has shown that a particular paint which atomizes very poorly can be made to perform ideally by a slight solvent adjustment. In fact, this technique makes it possible to apply paints with airless electrostatic that could not otherwise be sprayed satisfactorily with the No. 2 Process.

Ransburg is recommending the following resistance range for best performance of coating materials: 50,000-1,000,000 ohms for No. 2 Process automatic equipment; and 100,000-1,000,000 ohms for the No. 2 Process

hand spray gun. These values are based upon Ransburg's new test instrument—"Paint Resistance Tester." Along with the tester, Ransburg is making available a Triplett Model No. 630PL Ohmmeter.

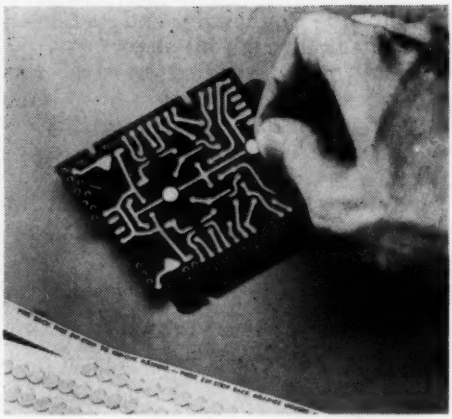
Manufacturer: Ransburg Electro-Coating Corp., Indianapolis 23, Ind.
For more data circle **2** on Reader Service Card

★ ★ ★

Self-Sticking Solder Dip Masks

Pre-cut, self-sticking circular masks can be used to mask off index holes, component mounting holes and areas on printed circuits where solder is unwanted, according to the developer, W. H. Brady Co., manufacturer of pressure-sensitive tape products.

Circular masks, from ¼ to ¾ inch O.D., are mounted on portable dispenser cards for assembly line application to semi-finished printed circuits before dip soldering. The thin, 0.003-inch crepe-backed masks, made from pressure-sensitive B-540 tape, adhere to metal and phenolic surfaces



Quik-Masks: mask off index holes on printed circuit boards to protect from dip solder.

for the "Solution to your Plating Problems" . . . . come to

JELCO

BRASS ADDITIVE . . . *can be used in standard & high speed formulations — still & barrel plating*

- Increases efficiency and throwing power
- Produces brighter and faster plating
- Allows use of a higher current density
- Retards anode polarization
- Eliminates cyanide and ammonia fumes

A Proven Process!

Used successfully by job platers and manufacturers

Non-Critical
Boosts Production
Cuts Rejects

One of America's leading manufacturers
- BRASS Additive
- COP-BRITE
- BARREL COPPER Brightener
- BARREL NICKEL Brightener

For technical information, complete details and prices . . . write to

JELCO Finishing Equipment Corp.
153 East 26th Street, New York 10 • Phone LExington 2-3055

For more data circle 351 on Postpaid Card

CLEANING VERSATILITY by Cincinnati

Combines

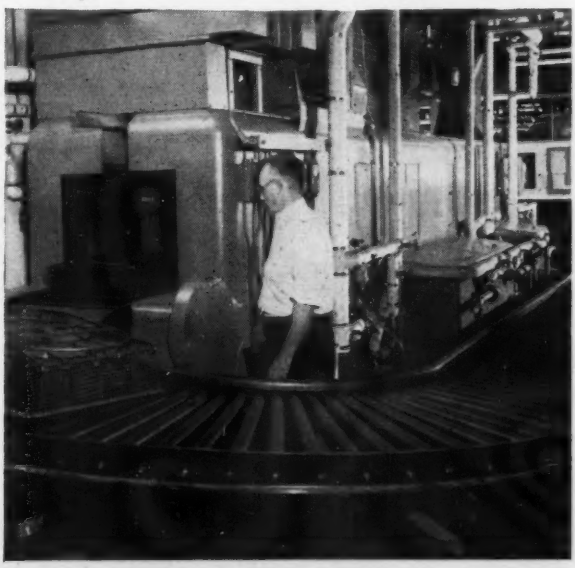
Belt Conveyor and Monorail Conveyor

- **Washes**
- **Rinses**
- **Rust Proofs**
- **Dries**

Processes

- **Steel**
- **Cast Iron**
- **Brass**
- **Aluminum**
- **Stainless**
- **Stampings**
- **Castings**
- **Screw Machine Parts**
- **Die Castings**
- **Machined Parts**
- **Forged Parts**

In many cases, Cincinnati engineers are called upon to design equipment to clean one particular part. In others, they have to come up with a machine that will clean anything in the plant . . . present and future! Installed in the New York State division plant of a noted American manufacturer, the machine illustrated is such a "jack of all trades". It handles all pre-finishing, pre-inspection and pre-assembly cleaning for the complete plant. It's another example of Cincinnati's ability to engineer equipment to a problem and to a budget, too.



What's your problem? Ask for a no-cost, no-obligation survey of cleaning requirements by: **Cincinnati Cleaning & Finishing Machinery Co., 2008 Hageman St., Cincinnati 41, Ohio**

For more data circle 352 on Postpaid Card

with finger pressure. They withstand 700 deg. F. dip soldering temperatures for six seconds. They can be removed clean and free from the circuit card, leaving no adhesive residue. Any solder area adjacent to the mask is outlined in a clean, sharp line. The mask adhesive contains no sulphur, free chlorine or salts to set up electrolytic corrosion.

Brady dispenser masks can be applied rapidly. Using a Brady CH-4 Card Holder (to hold the card-mounted masks), an operator can apply as many as 1,000 per hour.

A sample card of Brady Quik-Masks for dip solder protection, plus Brady Bulletin No. 160 covering a wide range of masking applications, will be sent on inquiry directed to W. H. Brady Co., 727 W. Glendale Ave., Milwaukee 9, Wisconsin.

For more data circle **3** on Reader Service Card

Single-Tube Stainless Steel Filter

A filter recently introduced by Commercial Filters Corporation has a one-piece stainless steel shell. The unit is recommended for filtering liquids and gases that have a tendency to corrode or react with the filter.

Fulflo Filter

Designated as the SS7.5C Fulflo Filter, this unit is designed for operating at pressures up to 750 p.s.i.g.

Equipped with a 10-inch Honeycomb filter tube, the unit filters liquids at a maximum rate of five g.p.m. Filter tubes are manufactured

FREE . . . from ABBOTT

the vial that shows you why we are your best source for better burnishing media

As shown here, Abbott offers a variety of high quality steel burnishing shapes in several sizes – each shape having a special job to do. Each one is designed to make effective contact on metal stampings and castings of any shape and size. Available in balls, pins, cones, ovalballs, ballcones, diagonals, and pebs, Abbott shapes range in diameter from 1/16" to 3/4". Request the vial that shows our variety; descriptive literature also is available on request.

ABBOTT *a HALF century of WHOLE service to industry* 1909 1959

THE ABBOTT BALL COMPANY

14 RAILROAD AVE., HARTFORD 10, CONN

For more data circle 353 on Postpaid Card

There is a DETREX process for all cleaning needs—Zinc, Steel, Brass, Copper, Nickel, etc.

"Progress" is another word for DETREX. By continuing research in the laboratory and in the field, plus a constant awareness of new methods and techniques, DETREX has developed cleaning processes for the Electroplating industry that have been needed for years.

These new processes assure absolute removal of buffing and polishing compounds, and all other intentional soils. Your present equipment is adequate for these new processes.

Whatever your cleaning requirement, and regardless of your location, a DETREX Engineer will be glad to give you complete technical information on these important new developments. To keep pace with progress—write today to:

DETREX CHEMICAL INDUSTRIES, INC.

Box 501, Dept. PF-759, Detroit 32, Michigan

For more data circle 354 on Postpaid Card

you can tell

CRES-LITE

BRONZE POWDERS

are Pure, Brilliant Metallic Bronze!

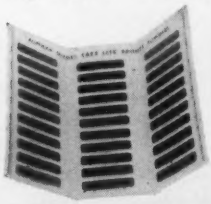
- **by the brilliant sheen and full-bodied lustre!**
- **by the coverage—less cost per square inch of finished product!**

Unequalled for smoother, more brilliant Plated-Effect Finishes—by spray, dip or flow coating.

IN STOCK—tremendous selection of colors including popular metallic pastels, statuary and antique shades.

COLORS MATCHED—with no variance in quality, color or lustre from batch to batch. Fast service guaranteed.

SPECIAL COLORS—Over 25 years experience in creating special colors and shades for the plastic and metal finishing trades. Satisfaction assured.



write for yours now!

NEW COLOR CARD FREE!

Full Range of Colors for Immediate Delivery

CRESCENT BRONZE POWDER CO.

118 W. ILLINOIS STREET, CHICAGO 10

1841 S. Flower St., Los Angeles 15

For more data circle 355 on Postpaid Card

in densities that remove particles down to one micron.

Bulletin S-600, available from the manufacturer, gives complete details.

Manufacturer: Commercial Filters Corporation, 2 Main St., Melrose 76, Massachusetts.

For more data circle **4** on Reader Service Card

★ ★ ★

Remote-Controlled Ultrasonic Generator

A high-production ultrasonic generator equipped with remote controls has been introduced by Branson Ultrasonic Corporation. It is useful in production cleaning operations where there is a central control panel, since the ultrasonic controls can be mounted with the other controls, so that the operator need not leave his station.

Ultrasonic Generator with Remote Control

Both remote and local control panels have filament and plate power switches, line voltage meter and push buttons for motor turning.

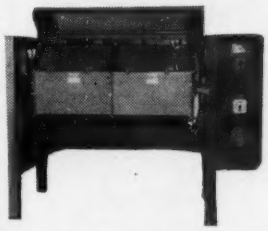
The unit (Model APT-500) has 3-kw average power output, will acti-

To page 102→

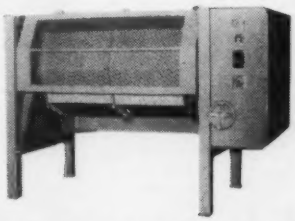
RAMPE PRECISION BARREL FINISHING MACHINES

America's Most Complete Line Can Save You Time and Money In Your Operation

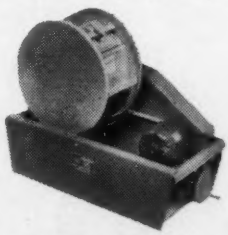
Real economy is only one of the many advantages Rampe has built into these Precision Finishers. Other features include exclusive "Unit Design" interchangeable barrels with your choice of single or multiple compartments, variable speed drive, material handling accessory equipment, remote control starter and magnetic brake systems, automatic timers, safety gates, quick-lock doors—**plus** the exclusive patented Rampe "Floating Power" drive. All are designed for faster, better, more dependable operation. For best finishing results, compare—and select from Rampe's complete line of **proved performance** units.



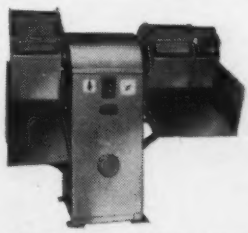
ALL-PURPOSE MACHINE. Model V8 has all the features you want for fast, low-cost operation in custom finishing or short-to-medium cycle runs. Has full 8 cu. ft. capacity, variable speed and "Floating Power" drive.



30 X 48 BARREL SIZE. Rampe's newest, most rugged heavy-duty machine. The Model 30 saves labor, speeds up production and assures uniformity in finished pieces. Economical in cost and operation, offering exceptional savings in deburring and finishing of widely different pieces.



PORTABLE, PRECISION FINISHING. The compact, easy-to-use, easy-to-move Rollabrader gives you all the features of larger, more costly equipment. Ideal for sample lots, instrument parts, laboratories. Barrel lifts off for loading, unloading, storage.



FLEXIBLE FINISHING CAPACITY. Three different-sized barrels on one machine! The ST-3 "Vari-Load" offers the most varied choice of barrel sizes, from 0.66 to 2 cu. ft. capacity. Handles steel ball burnishing or micro-finishing of the most delicate parts.

NEW CATALOG illustrates and gives complete data on all Rampe machines. Send for your copy today.

RAMPE MFG. CO.

14915 WOODWORTH AVE., CLEVELAND 10, OHIO

For more data circle 356 on Postpaid Card

The most efficient, most trouble-free pa

ee paint-supply system ever devised!

Compare for yourself! No other method can match these important benefits of the DeVilbiss pressure-feed system.

1 **DEPENDABILITY!** Delivery is always consistent, and not dependent on proper functioning of pumps and other mechanical devices.

2 **EFFICIENCY!** Direct-applied pressure eliminates pump or booster mechanisms that take extra power to operate.

3 **LOW OPERATING COST!** Requires less air than any other type pressure-supply system.

4 **FOOLPROOF OPERATION!** No moving parts to wear, bind up, or get out of order.

5 **ACCURATE ADJUSTMENT!** Sensitive regulation of direct-applied air pressure guarantees more accurate control throughout wider range of pressures.

6 **DURABILITY!** One-piece, galvanized boiler-plate shell has no wear-out.

7 **UNIFORM FLOW!** The steady force of static pressure is unmatched for delivery with absolutely uniform flow rate.

8 **NO PULSATION!** No pumping action to set up surge and cavitation cycles.

9 **EASE OF CLEANING!** Simple, seamless container; full-open top; no complicated mechanism.

10 **LOW COST!** Initial purchase is less. Maintenance is negligible.

DeVilbiss Pressure-Feed Tanks are full-drawn from one piece of ¼" boiler-plate steel, and galvanized inside and out. Heavy, pressed-steel lids seal with a tough synthetic gasket; are secured by rugged, forged-steel clasps. Built to A.S.M.E. specifications. Sizes: 2, 5, 10, 15, 30, and 60 gallons. Additional sizes (up to 175 gallons) and special types available.

If you want the simplest, most practical means of delivering material under constant pressure, see your distributor for a DeVilbiss Pressure-Feed Tank.

THE DEVILBISS COMPANY
Toledo 1, Ohio
Barrie, Ont. · London, England · São Paulo, Brazil
Branch Offices in Principal Cities

FOR BETTER SERVICE, BUY
DEVILBISS

DUST COLLECTORS · INDUSTRIAL POWER WASHERS · FLOW & DIP COATERS · SPRAY BOOTHS
OVENS · AIR COMPRESSORS · SPRAY EQUIPMENT · HOSE & CONNECTIONS · MIST COOLANT UNITS

For more data circle 357 on Postpaid Card

vate up to 300 gallons of cleaning solution or six square feet of transducer area. The generator has two oscillators and it can be used to power two ultrasonic cleaning tanks independently.

Manufacturer: Branson Ultrasonic Corporation, 40 Brown House Rd., Stamford, Conn.

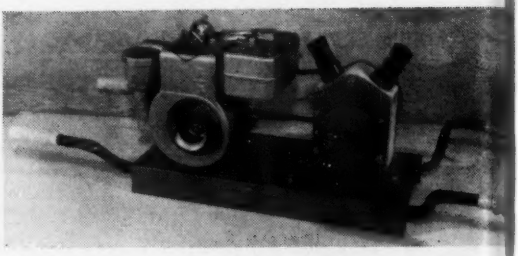
For more data circle **5** on Reader Service Card

★ ★ ★

Portable Pump

A portable pump for corrosives, recently introduced by Vanton Pump and Equipment Corporation, is named the "Tote-A-Pump." This unit is useful in pumping corrosive fluids in remote locations.

Pump body blocks and liners are available in a wide variety of corrosion resistant plastic materials. "Tote-A-Pumps" are available with capacities of 1/10 gallon to 40 g.p.m.



Vanton Model XB120 "Tote-A-Pump" with 20-g.p.m. capacity, gasoline engine: can be used for pumping corrosives anywhere

These units have no shaft seals or stuffing boxes, require little maintenance, the manufacturer reports.

Manufacturer: Vanton Pump & Equipment Corporation, Hillside, N. J.

For more data circle **6** on Reader Service Card

PAINT STRIPPER

THE NEW MIRACLE

STRIPEX #153

NO HEAT NECESSARY!

A mild steel tank is all that is required. Strips All Types of Baked Enamels. Some Baked Coatings are Stripped Clean in a matter of Seconds. Excellent for stripping vacuum metallizing racks.

DYTEX CHEMICAL COMPANY

DYTEX

Chemical Specialties

PROVIDENCE 3, Rhode Island

For more data circle 358 on Postpaid Card

Removable Protective Coating

Development of a solvent-or-alkali-removable coating, Turco Fabrifilm, for in-shop protection of metallic and non-metallic surfaces during storage, forming and fabricating operations has been announced by Turco Products, Inc., manufacturer of industrial chemical processing compounds.

Expressly designed for use in mass-production, Turco Fabrifilm is applied by spray upon receipt of raw stock. The material is quickly applied, easily removed and requires no special drying procedures.

The Turco Fabrifilm coating is said to afford excellent abrasion resistance during all forming operations — blanking, routing, cold dimpling, shearing, rolling, drilling, sawing or riveting. It also repels moisture and protects industrial surfaces from corrosion and scratches during inside or intermittent outside storage. Turco Fabrifilm coatings will not interfere with the tools used in fabrication.

The Fabrifilm coating is removed at the same time parts are being alkaline cleaned prior to final surface preparation. Cleaning efficiency and rinsability of immersion cleaning tanks are not adversely affected by the material. For removal from large assembled objects, a thickened liquid material—Turco Fabrifilm Remover—is sprayed onto the surface and then hosed off with water or steam cleaned. Spot removal is easily accomplished by merely wiping off with a remover-saturated cloth.

The standard version of Turco Fabrifilm is colored blue. Turco Fabri-

ANNOUNCING

The new CRATEX

TOOL & DIE MAKERS KIT

The world's finest rubberized abrasives for deburring, smoothing and polishing tools, dies, patterns, molds, models, instruments and component parts.

Kit contains 80 wheels and points in the most popular sizes and shapes, equally assorted in four grit textures, coarse (C), medium (M), fine (F), extra fine (XF)... plus four mandrels for ⅛" chuck... packaged in plastic box, compartmented for fast selection. $7.50 complete.

Order your new Cratex Tool & Die Makers Kit #777 through your distributor—or, send your order to us for delivery by the Cratex distributor nearest you.

CRATEX *Free 8-page catalog available on request.*

MANUFACTURING CO., INC.

1600 ROLLINS ROAD, BURLINGAME, CALIFORNIA

For more data circle 359 on Postpaid Card

film. Natural is also available and can be dyed to any color code requirement.

Technical literature available.

Manufacturer: Turco Products, Inc., 6135 South Central Ave., Los Angeles 1, Calif.

For more data circle **7** on Reader Service Card

★ ★ ★

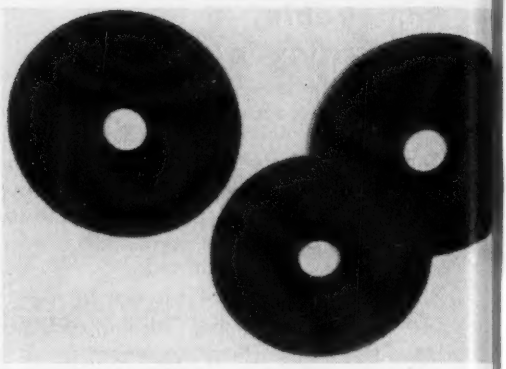
Abrasive-Impregnated Nylon Polishing Material

A nylon web impregnated with fine abrasives is the basic material in a polishing disc recently introduced by Minnesota Mining and Manufacturing Company.

The ¼-inch-thick disc is intended primarily for polishing and finish improvement, not stock removal. In addition, there is evidence that pickling times can be reduced by using polishing wheels made up from these discs to aid in removing material from the bottom of scale pits in the metal being pickled.

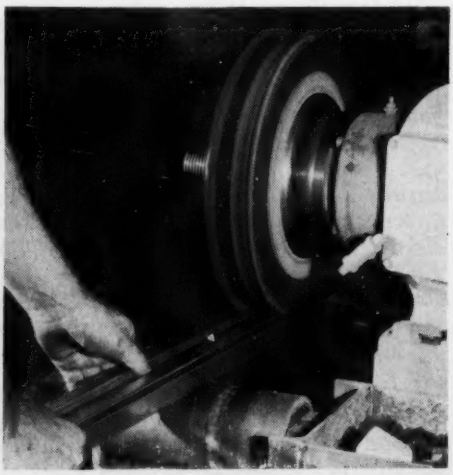
Called "Scotch-Brite Finishing Material," the 3M product generates a satin finish different from that produced by any other method, the manufacturer reports. This finish is consistent from beginning to end of a run, can be duplicated and even matched when damaged.

Scotch-Brite is already in use on stainless steel and aluminum, is expected to be useful in finishing zinc, brass, copper, titanium and other nonferrous metals. Typical items being



Scotch-Brite Finishing Discs: a nylon web which contains fine abrasive particles. Material is also available in sheet and roll form.

Scotch-Brite discs ganged to make up a polishing wheel make possible almost any width.



The 3M finishing material is conformable, takes the shape of almost any workpiece.

finished with this material include aluminum extrusions, die castings, tubing, forgings, stampings and sheets; zinc die castings; brass plumbing fixtures, tubing, builders' hardware; copper sheets; stainless steel sheets and tubing; jet blades; and food equipment.

Suitable for use on automatic, semi-automatic and hand-held equipment, the 3M product is said to replace buffing and polishing compounds in certain final finishing operations.

The abrasive-filled nylon is supplied as discs about ½ inch thick. Discs can be ganged on a spindle to make a polishing roll of practically any width. Sizes: 6-, 8-, 10- and 12-inch discs. Material is also available in sheets or rolls. Types: very fine, fine, medium and coarse.

Manufacturer: Minnesota Mining and Manufacturing Co., Dept. F9-184, 900 Bush Ave., St. Paul 6, Minn.

For more data circle 8 on Reader Service Card

Vibrating Barrel Finisher

The Vibratron, a machine for mass production cleaning, descaling, deburring, radiusing, fine finishing, and coloring of metal parts has been introduced at the Industrial Finishing Exposition by the Roto-Finish Co., Kalamazoo, Michigan.

Complex cast, forged, stamped, and machined parts with shielded and internal surfaces can be finished in the machine. Time cycles are short with a rate of production said to be up to 1,000 per cent greater than parts processed by conventional barrel finishing techniques.

Unlike conventional barrel finishing where the abrasive action takes place in a limited sliding zone, the work zone in the Vibratron extends throughout the entire abrasive mass.

Vibration is induced by a system of eccentric weights integrally mounted within the vibrating motor. The motor is mounted directly onto the bottom of

SPRA-CON

COMPLETE FINISHING SYSTEMS

POWER SPRAY WASHERS
DRYING OVENS
PAINT BAKING OVENS
FLOW COAT MACHINES
AIR REPLACEMENT SYSTEMS
CONVEYORS

SEND FOR FREE CATALOG

the SPRA-CON COMPANY

3600 ELSTON AVE. • CHICAGO 18, ILLINOIS

For more data circle 360 on Postpaid Card

NOW
DU-LITE 3-0
IN USE ON
MISSILES

low-temperature
black oxide finish
for stainless steels

NOW USED IN
MISSILE PROGRAM

Du-Lite 3-0 is being used on parts for the U. S. Armed Forces and in the Missile program.

Unusually Versatile
Du-Lite 3-0 can be used on: Stainless Steels, Cast and Malleable Iron. Nickel Alloys such as: Invars, Monels, Niresist, etc.

Remarkable Low Heat
3-0 blackening bath operates at 240°F or less.

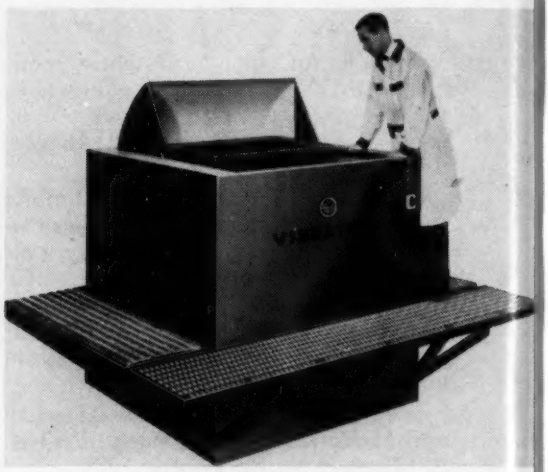
No Dimensional Change
Low-temperature 3-0 provides maximum activation necessary for coloring stainless steels without surface damage, or dimensional change often caused by other processes which require excessive heat.

Du-Lite
CHEMICAL CORPORATION
6 River Rd., Middletown, Conn.

For more data circle 361 on Postpaid Card

the vibrating tank. The motor is completely water-proof, and power requirements are low. The machine need not be bolted to the floor.

The Vibratron is offered in a variety



Roto-Finish Vibratron: faster finishing

of sizes to meet varied production requirements. There are four options for each size.

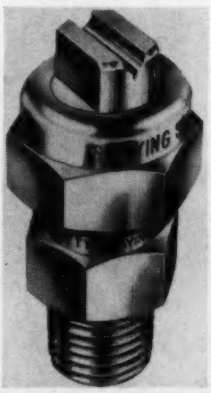
Manufacturer: Roto-Finish Co., Kalamazoo, Mich.

For more data circle 9 on Reader Service Card

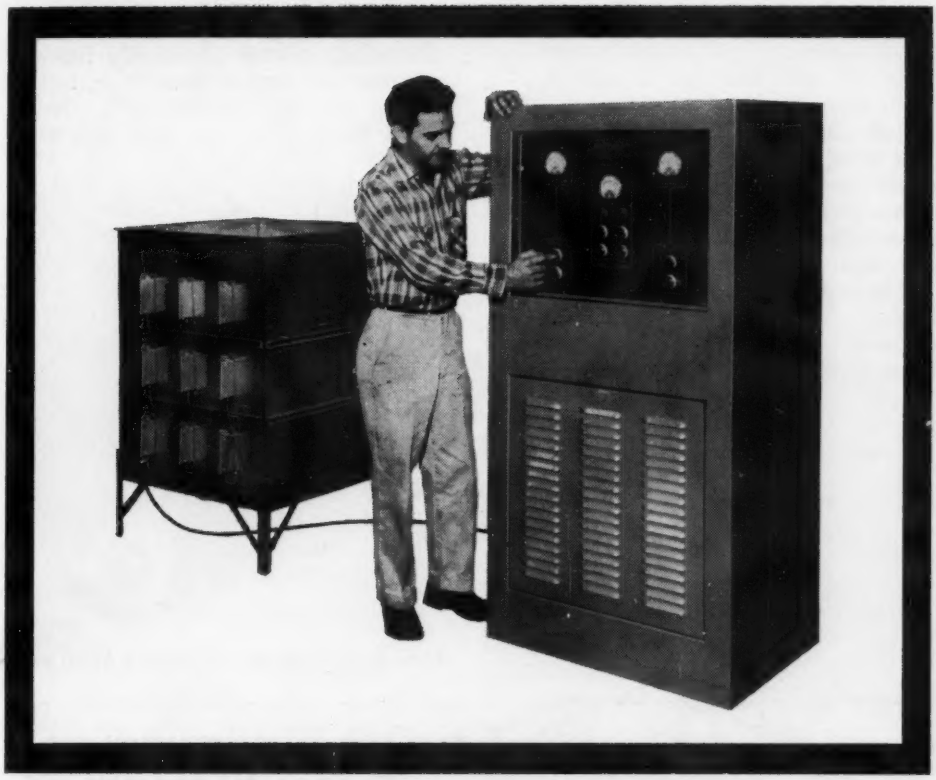
★ ★ ★

Nozzles for Flat Spray

Spraying Systems Co. has announced the 0011 series Flat Atomizing Nozzles for spraying operations requiring a flat atomized spray at exactly controlled and extremely low volume. These nozzles are believed to be the smallest capacity hydraulically op-



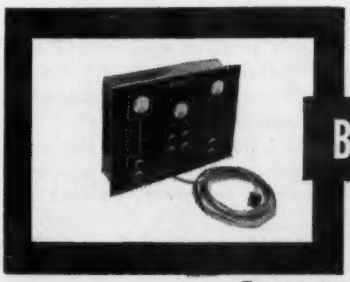
Flat Spray Nozzle



for **effective, economical cleaning** with **simple, dependable equipment . . .** and **assured factory-trained maintenance . . .**

BRANSON SONOGEN® Ultrasonic Cleaning Systems

Typical of Branson's advanced equipment is the new remote-controlled APT-500. Its 3 KW (average) of concentrated cleaning power activates up to 300 gallons of solvent. It can be operated completely from a central control station at a distance from the tank—ideal for conveyorized production installations.



For information on all Branson SONOGEN® ultrasonic cleaning equipment and a free 24-page book on ultrasonic cleaning, write

BRANSON ULTRASONIC CORPORATION

5 BROWN HOUSE RD., STAMFORD, CONN.

For more data circle 362 on Postpaid Card

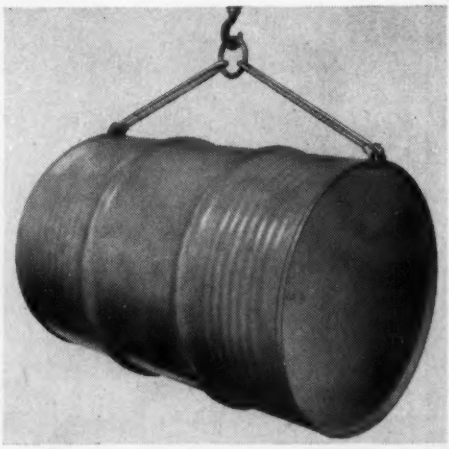
erated flat spray atomizing nozzles ever designed. At 40 pounds pressure, rated capacity of these nozzles is two-thirds gallon per hour. A choice of three different spray angles is available with these nozzles.

The nozzles are precision made with orifice dimensions equivalent to a 0.009-inch diameter. Advantage of these flat spray nozzles is that a high degree of uniform atomization is obtained by hydraulic pressure alone. No pneumatic connection is required. Typical applications include continuous mixing and coating operations where only an extremely small quantity of liquid per unit time is desired. Data Sheet 8085 available.

Manufacturer: Spraying Systems Co., 3229 Randolph St., Bellwood, Ill.
For more data circle **10** on Reader Service Card

Drum Lifting Hook

Handling drums of volatile liquids in hazardous areas has been made safe by use of the No. 41M Drum Lifting Hook. The cast hook, made of



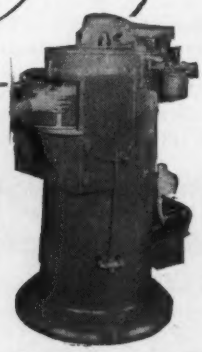
Morse No. 41M Drum Lifting Hook being used

FAST AUTOMATIC OPERATION FOR COATING PARTS IN BULK!

Saves Up to 80% of Material

reduce cost...save time with RONCI...

SPEEDIP CENTRIFUGAL COATERS



for: Enameling and Lacquering uniform or irregularly shaped parts; one ounce to several pounds; up to 20" long; Brass, Steel, Plastic or Wood parts; also for Waxing and Oil Coating.

It's fast—30 loads per hour.

Capacity: Available in three models—312 cu. in. to 4400 cu. in. Maximum Load—300 lbs.

Simple operation . . . automatically dip and then spin off all excess coating material.

All operations are automatic within the machine. No additional outside tanks required; no cleaning of machine necessary; no loss of material.

Write for further information and send your product to be coated.

RONCI
MACHINE COMPANY

A Division of
F. Ronci Co., Inc.
2 Atlantic Blvd.
Centredale 11, R. I.

For more data circle 363 on Postpaid Card

non-sparking manganese bronze, is connected to a large 3-inch diameter bronze ring with double 7/16-inch-diameter brass rods.

The non-sparking drum lifting hook is attached to any type of hoist by means of a 3-inch diameter ring, and the hooks are engaged over each end of the drum. The hooks have clearance for a ¾-inch rim and will accommodate standard 55 gallon drums as well as any drum up to 34 inches in length.

The capacity of this drum lifting hook is 1,000 pounds.

Manufacturer: Morse Mfg. Co., Inc., 727 W. Manlius St., East Syracuse, N. Y.

For more data circle 11 on Reader Service Card

★ ★ ★

Paint Stripper

Dytex No. 153 Stripper is a non-flammable volatile - solvent - type paint stripper which reportedly removes most coatings that are difficult to strip.

This solvent stripper has been used successfully for removing the following baked finishes: enamels and lacquers; melamines and epoxies; zinc chromates; vacuum - metallized coatings; plastisols; rubber coatings; vinyl coatings; plating rack coatings; and electric insulating varnishes.

Stripping is accomplished by immersing the object to be stripped in a tank of Dytex No. 153 Stripper at room temperature. Most coatings are removed within a few minutes. After removal from the stripping bath, the stripped object may be washed off, blown dry, or brushed off.

No. 153 Stripper may be used on

VIBRA-WASHER

. . . THE COMPLETELY NEW AUTOMATIC PARTS WASHER AND METAL CONDITIONING MACHINE

- **Labor saving**
- **Automatic unloading**
- **For single or multi-stage operations**
- **No nesting of parts during cleaning or conditioning cycle**
- **Adjustable capacities to 10,000 lbs. per hour**

The versatile new Simplicity VIBRA-WASHER, revolutionary machine for washing and conditioning of small metal parts, stampings and castings, employs a vibrating work carrier that automatically conveys parts through cleaning or conditioning bath. Solution is forced around parts, even into blind drillings and slots. In single stage, VIBRA-WASHER removes chips, oil and grease quickly . . . economically. In multi-stage, several units in line will provide cleaning, rinsing and phosphating, eliminating "between-stage" handling. Write today for Bulletin 107, to: Industrial Washer Division.

Simplicity
TRADE MARK REGISTERED

212 ENGINEERING COMPANY • DURAND 25, MICH.

For more data circle 364 on Postpaid Card

most base metals, including aluminum, without harmful effects. It cannot be used on magnesium.

Manufacturer: Dytex Chemical Co., 140 India St., Providence 3, R. I.

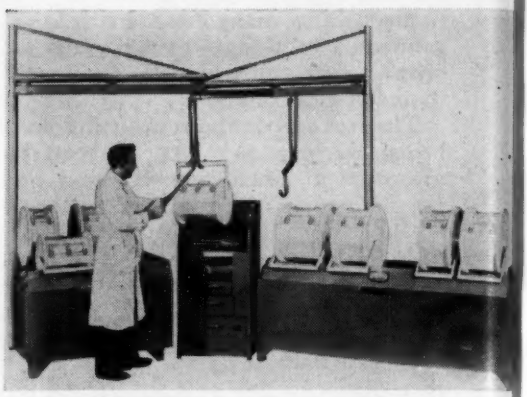
For more data circle **12** on Reader Service Card

★ ★ ★

Barrel Finishing System

A precision deburring and finishing system called "Roll Barrels" has been introduced by Almco, Queen Products Division, King-Seeley Corporation.

Almco Roll Barrels are useful for processing a variety of parts in small or large lots. They provide a large-capacity operation in a small floor area. Using two machines, one operator can continuously process up to 12 different barrels full of parts at the same time.



Almco Roll-Barrels: big capacity, little space

Roll Barrel machines use parallel rubber covered rollers powered by a variable-speed electric motor. Small barrels with flanges are placed on the rollers, which rotate the barrels. Speed of rotation for any barrel is determined by motor speed and size of barrel. Nine barrel sizes are available and barrel speeds of 17 to 65 r.p.m. are possible.

Parts and media are loaded and unloaded in a special separating cabinet. Barrels are lifted on and off the continuously moving rollers with a built-in mechanical hoist boom.

Almco Roll Barrel Machines are available as single-row or double-row units.

A four-page brochure has been published on Almco Roll Barrels. Copies may be obtained from the manufacturer.

Manufacturer: Almco, Queen Products Division, King-Seeley Corp., Albert Lea, Minn.

For more data circle **13** on Reader Service Card

★ ★ ★

Copper Brightener

Allied Research Products, Inc., introduced Isobrite 623 Copper Addition Agent for semi-bright cyanide copper plating solutions. It is a "one-shot" brightener, can be used to produce

For more data circle 365 on Postpaid Card

either a semi- or full-bright deposit. It is suitable for either rack or barrel plating and is easily controlled to produce any desired level of brightness by using just the single addition agent.

Over steel, zinc die castings, brass or bronze parts, Isobrite 623 produces a copper film that can be bright nickel plated without the need for buffing, if the finish of the orginal material permits.

In addition to Isobrite 623, Allied has developed a Rochelle salts replacement, Isobrite 630, which is said to increase cathode and anode efficiency and tie up impurities, including hard water salts.

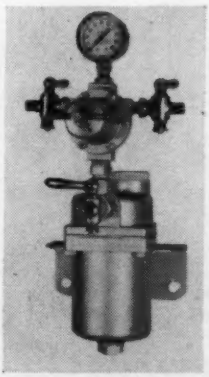
Another product for chrome reduction is also available. Called Isobrite 631, this material is efficient in reducing high chrome contamination and can be used as a maintenance addition to keep chrome contamination under control.

Manufacturer: Allied Research Products, Inc., 4004-06 E. Monument St., Baltimore 3, Md.

For more data circle **14** on Reader Service Card

★ ★ ★

Moisture Extractor-Pressure Regulator



Moisture Extractor, Pressure Regulator

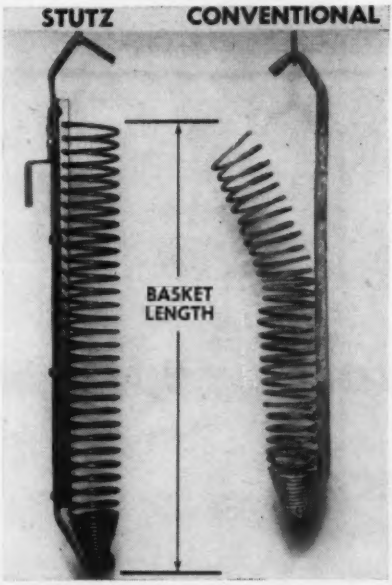
An "Automatic Air Transformer" recently introduced by Spee-Flo Company extracts moisture and dirt from compressed air, also regulates pressure. Completely automatic, it starts when the air flow starts, stops when the air flow stops. No manual drainage is required.

Main compo-

To page 114→

STUTZ

BALL ANODE CONTAINER NEW CONSTRUCTION FOR LONG SERVICE



STUTZ CONSTRUCTION — Heavy gauge steel with wire woven through steel angle firmly attached to main stem. Cannot come apart or loosen. Side clip is for STUTZ BARREL PLATING TANKS having submerged rectangular anode bars. Side clip not furnished for racked plating tanks. Standard hook 6 inches. Other hook lengths furnished in quantity of 100 or more.

WELDED CONSTRUCTION — Note how welds have dissolved or broken in use. Often caused in barrel plating where currents are high and barrel transfer is rapid.

PRICES—12c per inch for basket lengths 18 inches or longer. Side clip 15c extra. Increments 3 inches. Curved containers one size only, 27" for 14" and 16" diameter barrels 15c per basket additional.

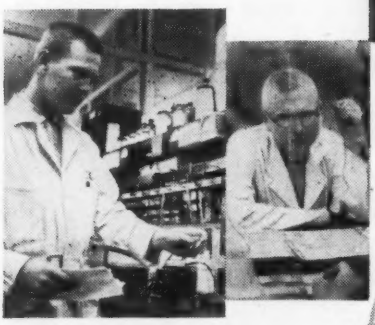
Serving Industry 35 Years

THE STUTZ CO.

4410 Carroll Ave., Chicago 24, Ill.

For more data circle **366** on Postpaid Card

plating leadership ✻



SOLVE YOUR PLATING PROBLEM WITH

world's largest plating supplier

the **udylite**

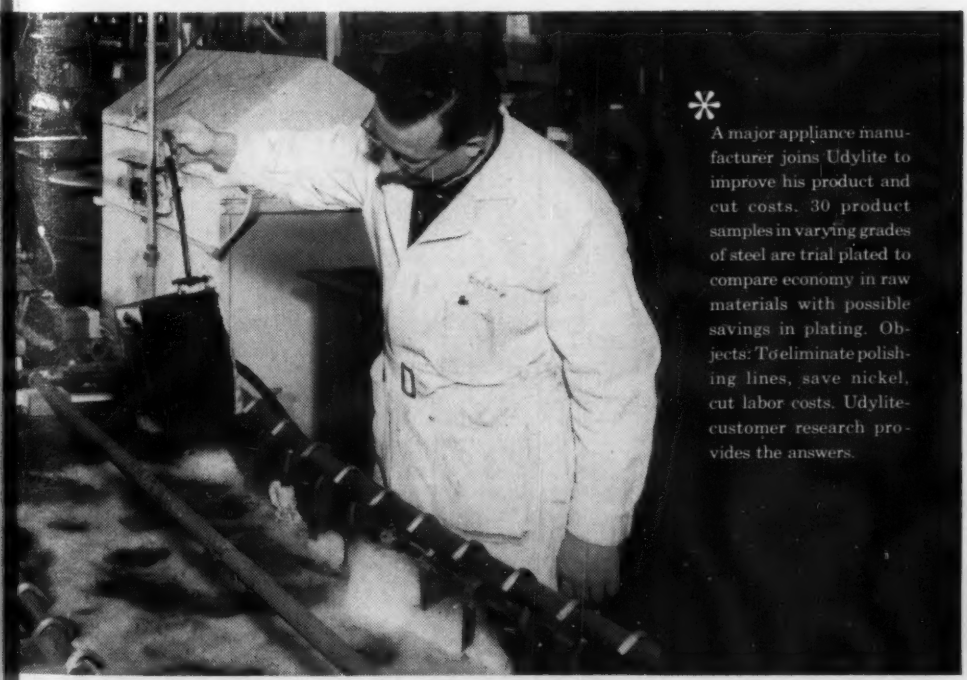
corporation

detroit 11, michigan

There is a customer-service laboratory reserved for your use at all times in Detroit. Udylite's Customer Service teams are established there exclusively to cooperate with you in anticipating those production stoppers that arise now and then . . . to save you countless man hours and dollars, too. Whether it's a solution you're not sure of, the choice of the best-possible procedure, or if you just want to "double check" before starting a big run, this Udylite service is yours. Your sample parts are examined by experts under the tightest laboratory controls. Pilot jobs are conducted under carefully simulated field conditions. Your solutions are the object of precise analysis. Discover how Udylite's complete Customer Service facility can help better your production. And it is just one of the many benefits that come to you from Udylite.

UDYLITE'S CUSTOMER SERVICE TEAM

. . to produce better, more saleable products at lower cost



*A major appliance manufacturer joins Udylite to improve his product and cut costs. 30 product samples in varying grades of steel are trial plated to compare economy in raw materials with possible savings in plating. Objects: To eliminate polishing lines, save nickel, cut labor costs. Udylite-customer research provides the answers.

For more data circle 367 on Postpaid Card

nents of the device are a heavy-duty baffle-type separator and a self-relieving pressure regulator with balanced valve design.

Three models are available: water separator only, or with one or two pressure regulators.

Manufacturer: Spee Flo Company, 6614 Harrisburg Blvd., Houston 11, Texas.

For more data circle **15** on Reader Service Card

★ ★ ★

Vapor Degreaser

Phillips Manufacturing Co. has introduced an economy-model vapor degreaser.

The "Scotsman" vapor degreaser is electrically heated, has vapor control and high-temperature shut-off. Immersion-type heater is removable for cleaning. Tank has capacity of six gallons.

Phillips Economy-Model Vapor Degreaser

Manufacturer: Phillips Manufacturing Co., 3475 W. Touhy Ave., Chicago 45, Illinois.

For more data circle **16** on Reader Service Card

★ ★ ★

Spotting-Out Preventive

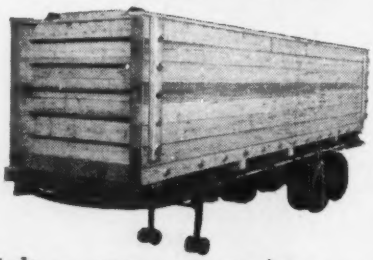
A tarnish and corrosion inhibitor (Entek CU-55) which is said to minimize spotting-out of copper and brass plate has been introduced by Enthone, Inc. of New Haven, Connecticut, subsidiary of American Smelting and Refining Company.

The product reacts with copper and copper alloys to form an invisible coating which prevents staining, green salt formation, finger marking, pit corrosion and spotting-out under high-humidity storage conditions.

Entek CU-55 is a non-toxic liquid. It does not contain chromates.

Copper and brass surfaces treated with Entek CU-55 will withstand 200 hours exposure to 100 per cent humidity at 100 deg. F. without loss of

BIG TANKS
. . . or small
to fit *your* needs



Made to meet *your* requirements . . . from only the finest woods. Over 90 years experience. Get free estimates.

WOOD TANK DIVISION

Kalamazoo TANK & SILO CO.

1571 Harrison Street, Kalamazoo, Michigan

For more data circle 368 on Postpaid Card

luster, the manufacturer reports. The treatment improves the solderability of copper and brass and increases the adhesion of lacquers and enamels. It protects steel coated with thin deposits of copper or brass from rusting in storage.

Enthone recommends Entek CU-55 for use in preserving lustrous copper and brass finishes on jewelry, lamps, light fixtures, chains, screws, hardware and household utensils.

Literature on this product is available from the manufacturer.

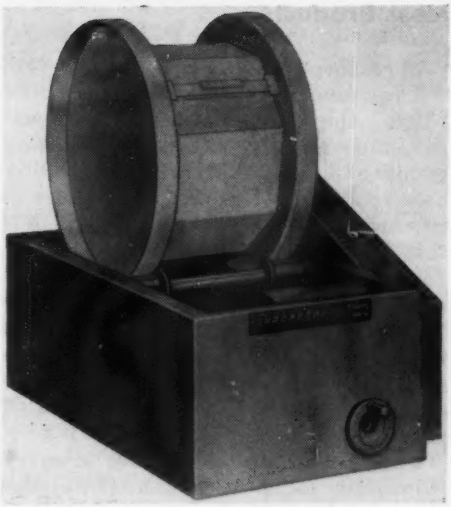
Manufacturer: Enthone, Inc., subsidiary of American Smelting and Refining Co., 442 Elm St., New Haven, Connecticut.

For more data circle 17 on Reader Service Card

★ ★ ★

Portable Finishing Barrel

A portable deburring and finishing barrel for laboratories, job shops, research and development departments and manufacturers with limited finishing needs has been announced by Almco, Queen Products Div., King-



Portable Deburring and Finishing Barrel

Bond® TACK CLOTH for a SPECK-FREE FINISH EVERY TIME!

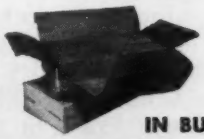
SAVE TIME AND WORK WITH BOND TACK CLOTHS — NOW AVAILABLE IN HANDY ROLLS OR CUT BULK—WHITE OR GOLD —IN FOUR DIFFERENT TYPES OF CLOTH

Get your Tack Cloth packed just the way it's easiest for you to use . . . either in 150 yard rolls of 36" wide cloth or in handy cartons . . . 100 or more Tack Cloths to the carton.

No matter which way you buy it, you can be sure that every square inch will stay SOFT and TACKY until the very last bit is used up! The Cut Bulk size is 18" x 36" . . . folded to 4½" x 18" or 9" x 18" for ease of handling. ALL BOND TACK CLOTH is Spontaneous Combustion Proof, Lint-Free, and Wax-Free. Gives a sparkling speck-free Finish every time. Clean and Sanitary. No waste. Choice of Standard, Extra Tacky or Less Tacky.

IN ROLLS

Cut off any size piece to use as needed.



IN BULK

Cut and folded. Ready to use.

TRY THEM AND COMPARE RESULTS.

Samples Gladly Sent Upon Request.

Bond® CHEMICAL PRODUCTS CO. 2639 N. CLYBOURN AVE. CHICAGO 14, ILLINOIS

"The Tacky Wiper Specialist"

ALSO INDIVIDUALLY PACKED IN GLASSINE ENVELOPES—144 TO THE CARTON.
A WARRANTY OF SATISFACTION IN EVERY CARTON.

For more data circle 369 on Postpaid Card

Seeley Corporation.

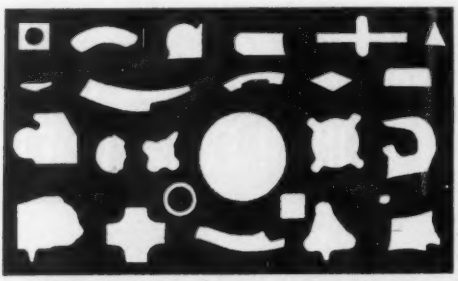
Designated Model DBM-10 "Super Mite," this unit is intended for use in plants and departments processing small lots of parts. It will speedily deburr and finish work parts, and will produce close tolerance radii and low micro-inch surface finishes. It can serve as an auxiliary unit for processing special parts.

The 12-inch diameter by 8-inch wide barrel has a ½-cu. ft. capacity, and is equipped with a quick-acting cam-type door. It is driven at speeds variable from 19 to 38 r.p.m.

Small enough for one man to carry from one location to another, the "Super Mite" is compact, measuring 26 inches high by 30 inches long by 18 inches wide.

Manufacturer: Almco, Queen Products Div., King-Seeley Corp., Albert Lea, Minn.

For more data circle **18** on Reader Service Card



Pre-Cut Masks Speed Finishing

Eliminates hand cutting! Brady self-sticking pre-cut Masks are die-cut to close tolerances — go on fast and accurately — protect from finishing to inspection. Hundreds of shapes and sizes in stock for immediate delivery. Distributors in over 300 principal cities.

NARROW-SLIT MASKING TAPES — For fine line masking. Precision slit to .005" tolerances. Widths from 1/64" to 1/4" — 30 yard rolls.

Write for free samples and bulletin No. 160. 40A

W. H. Brady Co.

746 W. Glendale Ave., Milwaukee 9, Wis.

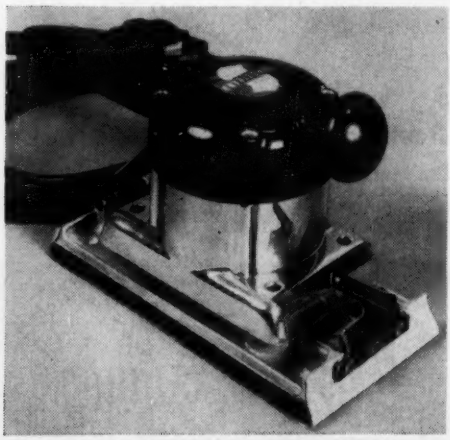
For more data circle 370 on Postpaid Card

Orbital Electric Sander

Model EO 900 orbital electric sander has been announced by Sundstrand Corporation. It is a high-output unit for continuous one- or two-hand operation with single-phase, 115-volt a.c. in a wide range of industrial applications.

The single-phase motor ensures constant operating speed without belts or gears, provides high starting torque, and is overload-proof, the manufacturer reports.

Model EO 900 uses one-half a standard sheet of sanding paper. In addition, eight interchangeable pads are available for maximum efficiency on a variety of finishing operations such as sanding grooves, soft shaped surfaces, polishing, conventional sanding of wood or metal.



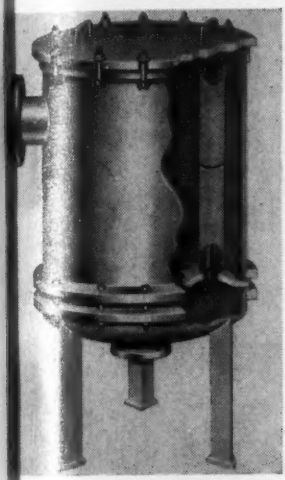
Model EO 900 Orbital Electric Sander

Model EO 900 orbital electric sander requires only a slight pressure on the stock to guide the unit during all types of finishing operations; operator fatigue is reduced materially.

Manufacturer: Sundstrand Corp., 2531 Eleventh St., Rockford, Ill.

For more data circle **19** on Reader Service Card

Plating-Solution Filter



Plating-Solution Filter

A rubber-lined steel filter for electroplating recently introduced by Commercial Filters Corporation has a swing-bolt cover to simplify replacing of elements and a center bottom outlet to facilitate cleaning.

Cover is removed simply by loosening bolts, swinging them out of the way, and lifting cover off. Honeycomb Filter Tubes are then completely accessible for changing.

Bottom outlet allows for quick, easy cleaning of entire vessel, simply by addition of a "T" connection with drain valve.

Choice of Honeycomb Filter Tubes includes cotton fibres with pure nickel or stainless steel cores for acid solutions, and plain steel (or non-metallic) cores for cyanide solutions. Honeycomb Filter Tubes are also produced in nylon, orlon, dynel, acetate or glass fibres.

The rubber-lined steel Fulflo Filter is available in six sizes for capacities up to 18,000 g.p.h. Other models are designed for larger capacities. Plain steel or stainless steel containers are also available.

Literature may be obtained from the manufacturer.

Manufacturer: Commercial Filters Corporation, 2 Main St., Melrose, Massachusetts.

For more data circle **20** on Reader Service Card

To page 120→

Alchemize

CHEMICAL POLISH FOR ALUMINUM

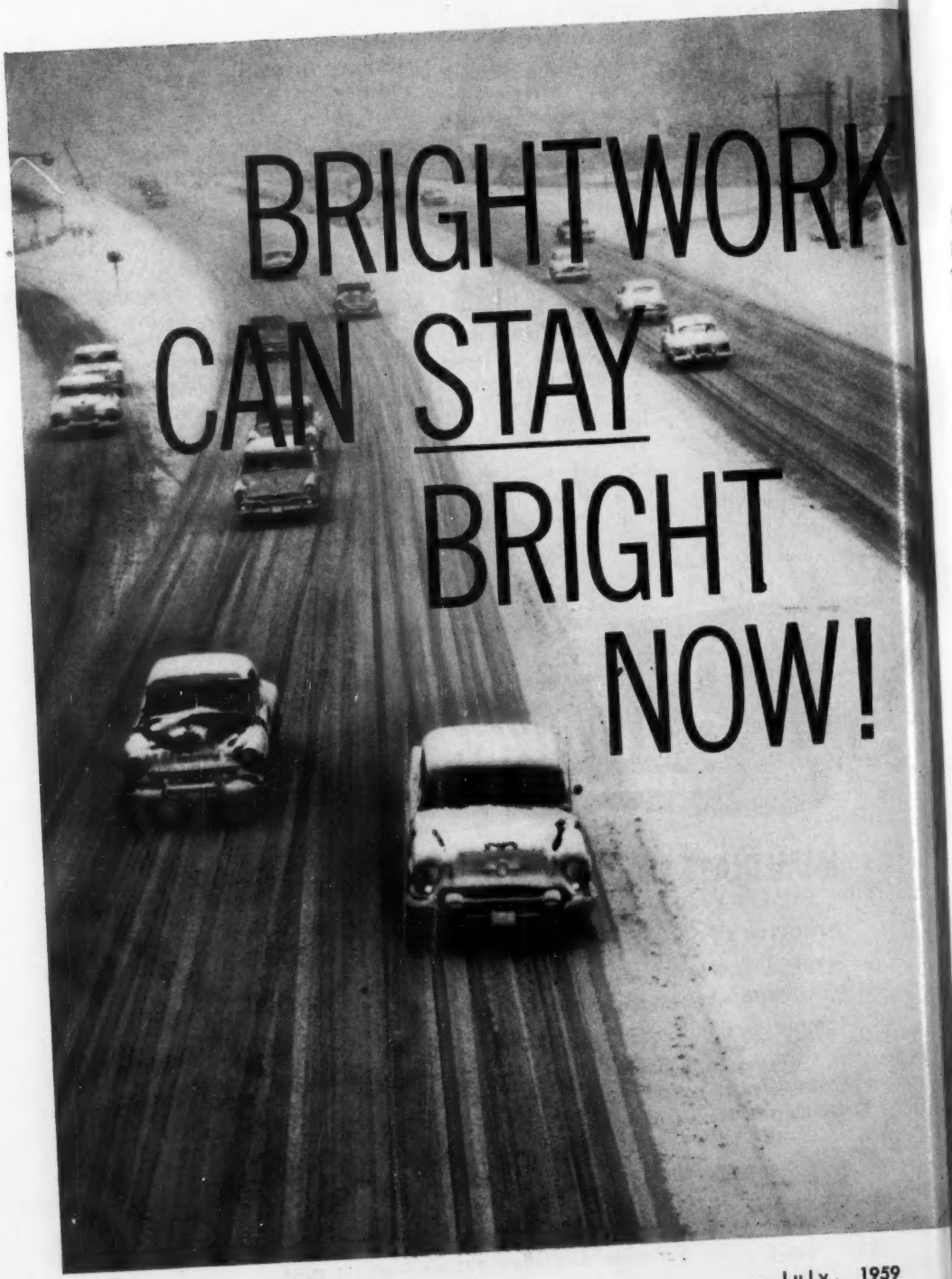
IMMEDIATE SERVICE and DELIVERY in U.S. and CANADA

America's Foremost Chemical Polishing Concentrate. Alchemize levels surfaces, producing any finish from satin to mirror-bright on otherwise impossible shapes and sizes. Want proof? We'll process **your** samples and make recommendations without charge.

Available in carboys, drums and tank trucks.

ALCHEMIZE CORPORATION • Congress Expressway and South Kolmar • Chicago 24, Ill.

For more data circle 371 on Postpaid Card


BRIGHTWORK
CAN STAY
BRIGHT
NOW!

Corrosion resistance increased up to 500% by M&T's "DUPLEX CHROMIUM"

By adding only a few minutes more plating time, you can add *years* to the life of chromium plated finishes in outdoor exposure.

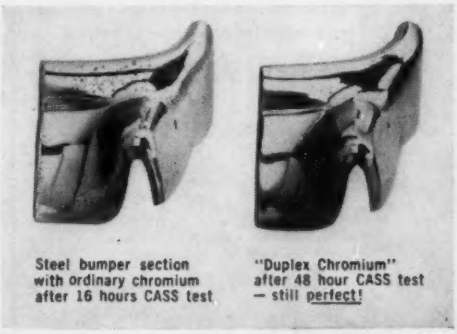
Using M&T "DUPLEX CHROMIUM" to increase chromium thickness approximately 5 times from the usual average of 10 millionths of an inch enables exterior parts to maintain an ASTM durability rating of 8 or better (10 is *perfect*)!

This thicker and more uniform chromium plate radically increases survival time in modern, severe, accelerated corrosion tests. Parts with ordinary chromium fail within 36 hours in CASS tests, or 2 cycles in Corrodkote tests. They survive four times longer when plated with 50 millionths of an inch M&T "DUPLEX CHROMIUM"...and over *ten* times longer with 100 millionths.

NOW IN AUTOMOTIVE PRODUCTION

M&T's "DUPLEX CHROMIUM" is now producing superior results for automotive trim. On window ventilation frames, it is depositing in the same production time a *minimum* 30 millionth of metal in *recessed* areas. On back up light sections, the M&T Chromium ranges from 60 millionths minimum to 140 millionths maximum—a 1 to 2 variation as against *insufficient minimums* and 1 to 12 variation with ordinary chromium. Door sash channels previously plated with ordinary chromium ran only 16 hours in the CASS test before failure; with "DUPLEX CHROMIUM," they go 128 hours without failure.

Get the full, important details. Send for an M&T plating engineer to explain—or for technical paper.



Steel bumper section with ordinary chromium after 16 hours CASS test

"Duplex Chromium" after 48 hour CASS test — still perfect!

METAL & THERMIT
CORPORATION
GENERAL OFFICES: RAHWAY, NEW JERSEY
In Canada: Metal & Thermit—United Chromium of Canada, Limited, Rexdale, Ont.

For more data circle 372 on Postpaid Card

Acid-Resistant Mortar

Synar, an improved silica mortar, has been announced by Pennsalt Chemicals Corporation. Based on an aqueous colloidal suspension of silica, the product is an inorganic, acid-resistant mortar for use in the construction of masonry linings in containers for acids—storage tanks, concentrators and absorbers—as well as in stacks and chemical-process vessels.

Synar is said to be particularly suitable for sulfuric acid service. It is chemically inert to most inorganic strong acids and will resist concentrated acids at temperatures up to 1800 deg. F. In its final cured state, it contains over 95 per cent silica.

The mortar is prepared by adding Synar Silica Powder (composed of high-purity ground quartz of graded particle size) and a hardening agent to Synar Binder.

Since Synar hardens by chemical action and is not dependent upon either evaporation or dehydration, it will set readily in an enclosed area. It does not require an acid wash to bring about the final cure. Seven to ten days, depending upon temperature, are required for the final cure, however, and care must be taken during this period to protect the mortar from freezing temperatures and direct contact with water. Copies of Synar literature are available on request.

Manufacturer: Corrosion Engineering Products Dept., Pennsalt Chemicals Corp., Natrona, Pa.

For more data circle **21** on Reader Service Card

★ ★ ★

Metallic Baking Enamels

A line of ready-mixed gloss baking enamels has been announced by O'Neal Paint Products, Inc.

Designated as the No. 900 Series, the enamels are formulated in gold, brass, copper, bronze, aluminum, and all bronze powder colors. The enamels can be applied in a single spray coat, and can be baked to a permanent mirror-like gloss, the manufacturer states.

This line of metallic gloss baking enamels is designed to produce a lustrous finish in a single coat.

Manufacturer: O'Neal Paint Products, Inc., 15115 Chatfield Ave., Cleveland 7, Ohio.

For more data circle **22** on Reader Service Card

★ ★ ★

Heavy-Duty Ultrasonic Cleaning Equipment

A line of heavy-duty ultrasonic cleaning machines is produced by Acoustica Associates, Inc.

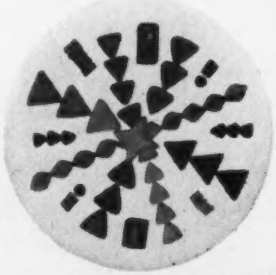
The heavy-duty line includes models GU 150, GU 420 and GU 720, with outputs of 150 to 700 watts and tank capacities of three to eight gallons.

The heavy-duty line is designed for continuous duty and for unusually

Introducing

FORTUNE

BARREL FINISHING MEDIA FOR ANY TUMBLING NEED!



No jamming, or "rolling over" action.

Special shapes prevent jamming and rapid deburring saves costs.

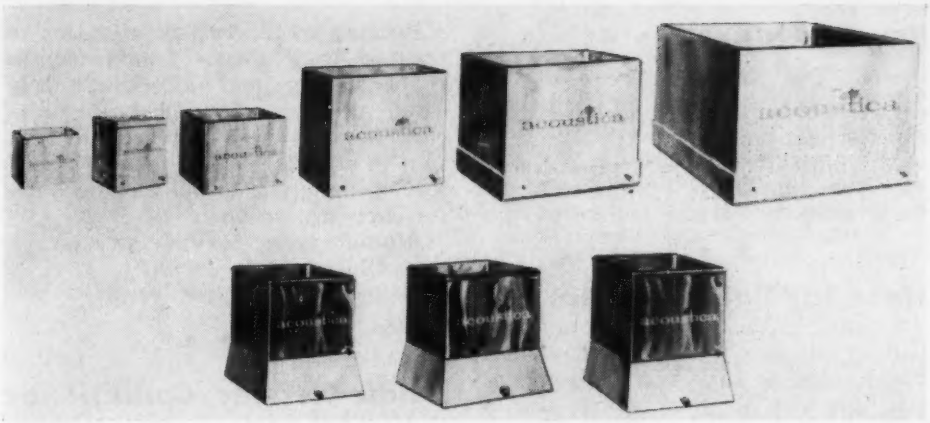
Write for complete information.

FORTUNE INDUSTRIES, INC.

11770 DEXTER RD. CHELSEA, MICH.

Chelsea Phone—GR 9-3621

For more data circle 373 on Postpaid Card

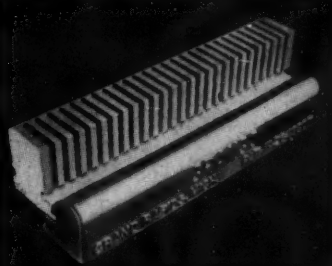


Acoustica general-purpose (top) and heavy-duty ultrasonic cleaning equipment

difficult cleaning operations, such as cleaning heavily soiled gear trains, parking and water meters, castings, waveguide structures, tubing and glassware.

Acoustica also markets a general-purpose line, which includes models DR 50, DR 150, DR 250, DR 500, DR 1000 and DR 2500 and features average power of 50 to 2500 watts and tank capacities from one to 75 gallons. This equipment is designed for cleaning parts such as transistors, electron guns, printed circuits, electromechani-

GRANCO



Granco Irradiant Grid Gas Burner

Your products will glow when cured and dried with Granco flameless gas burner systems.

GRANCO INC.

...Specializing in designing and building to entire customer satisfaction . . .

Granco builds radiant ovens, dryers and furnaces.

Granco builds industrial washers and water wash spray booths.

Granco has original ideas, initiative, ability to design and install any size or style system, whether it is convection, radiation or otherwise.

Write for folders illustrating our extensive range of engineering and building know-how.

317 32nd STREET S.W.
GRAND RAPIDS 8, MICHIGAN

For more data circle 374 on Postpaid Card

cal assemblies, jewelry and other difficult-to-clean parts.

Manufacturer: Acoustica Associates, Inc., Fairchild Court, Plainview, N. Y.
For more data circle **23** on Reader Service Card

★ ★ ★

Hose for Paint Heaters

Created by the DeVilbiss Company's Rubber Division, the hose utilizes butyl water tubes on each side of the material hose with all three contained in a rubber jacket. Use of the tubes instead of channels within the jacket makes possible better seals at the heat exchanger and at the U-tube connection which returns the water for recirculation.

The heater hose used to deliver heated material to the spray gun was designed and produced by the DeVilbiss Rubber Division.

For more data circle 375 on Postpaid Card

Because of the variety of materials sprayed, by gun and by atomizer, the rubber in tubes and bulbs has to withstand attack by a number of chemicals. To meet these problems, the division selects its own rubber and reinforcing materials to build components for company products.

Manufacturer: DeVilbiss Co., Toledo 1, Ohio.
For more data circle **24** on Reader Service Card

★ ★ ★

Acidic Cleaner, Conditioner

An acidic detergent which combines cleaning, smut-removing and prepaint-conditioning properties has been introduced by Oakite Products, Inc., manufacturer of specialized chemical compounds for the metal industries.

This material, Oakite Compound No. 86, simultaneously cleans and improves steel's resistance to corrosion and receptivity to paint. It is particularly useful as a precleaner to improve phosphate coatings. It is also an effective cleaner for brass, aluminum, zinc, and terne plate.

The compound is recommended for use in spray washing machines in a three-stage operation: clean and condition in Oakite Compound No. 86, 2 per cent by volume in water solution; overflowing rinse; and final acid rinse. It may also be used in tank immersion operations.

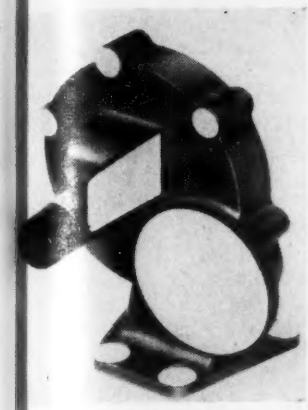
Manufacturer: Oakite Products, Inc., 20 Rector St., New York 6, N. Y.
For more data circle **25** on Reader Service Card

★ ★ ★

Masking Discs

"Kwiky-Dot" masking discs made by By-Buk Company are overlapped on the rolled release liner to facilitate release and use. This feature permits the masks for spray painting to be removed from the liner in long strings, or one at a time, as desired.

These masks are backed with ad-



Kwiky-Dot masks for painting

hesive that allows the mask to release without leaving a residue, even after baking at temperatures up to 350 deg. F.

"Anodize Special" tape made by the company has a special adhesive that will not leave residues on surfaces that have been anodized, chromated, phosphatized and otherwise conversion coated. These coatings often have an affinity for the adhesive used on masks.

Manufacturer: By-Buk Co., 4314 W. Pico Blvd., Los Angeles 19, Calif.

For more data circle **26** on Reader Service Card

Polyethylene Dispersion Coating

A sprayable high-density polyethylene coating which can be applied to metals is now being made in semi-commercial quantities by the Plastics Division of Koppers Company, Inc.

This coating has excellent continuity (freedom from pinholes), and outstanding adhesion on a variety of surfaces, the manufacturer reports. In addition, it has good impact resistance and flexibility on metallic surfaces. The polyethylene coating can be applied clear or in a variety of colors.

The Koppers coating may be applied at room temperature by various conventional coating methods. The coated part is subsequently heated to about 400 deg. F. for a few minutes to fuse the coating and bond it to the surface.

Suggested uses for this coating include industrial process equipment, tanks, drums, pipes, automotive parts,

REVOLUTIONARY!!!

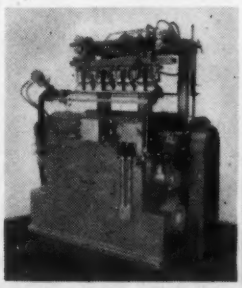
VERTICAL & HORIZONTAL

BUFFING and POLISHING MACHINERY

CENTRAL MACHINE WORKS

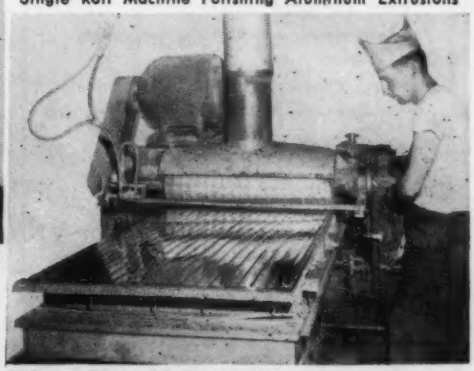
POLISHING MACHINES

- EASY TO SET UP
- ECONOMICAL TO USE
- FOR SHORT OR LONG RUNS



Series M Vertical Polisher

Series HM
Single Roll Machine Polishing Aluminum Extrusions



Write for complete information

CENTRAL MACHINE WORKS
72 Commercial St., Worcester, Mass.

For more data circle 376 on Postpaid Card

appliances, marine equipment, as a lining for food and beverage cans, and for electrical insulation.

Manufacturer: Plastics Div., Koppers Company, Inc., Pittsburgh 19, Pa.
For more data circle **27** on Reader Service Card

★ ★ ★

Higher-Temperature Infrared Oven

An infrared oven that is said to produce higher temperatures has been introduced by Patent-Flex Manufacturing Co., Div., Wil-Son Inventions Corp.

The oven is heated by means of R-40 lamps with hermetically sealed reflectors. The radiation from each lamp row is projected upwards at an angle of 30 degrees to the horizontal. This is said to permit higher ambient air temperatures and to produce more uniform heating of the products being processed.

The higher ambient temperatures and the hermetically sealed reflectors make this oven useful for such operations as smoke degreasing and baking, especially where smoke and vapors would cause loss of efficiency in open reflectors.

Manufacturer: Patent-Flex Manufacturing Co., Div. of Wil-Son Inventions Corp., Cloverport, Ky.
For more data circle **28** on Reader Service Card

★ ★ ★

Material Handling Pumps

Material handling pumps that use less air but offer better material flow have been introduced by Binks Mfg. Co., Chicago, Illinois, manufacturer of spray painting systems.

Called the Pacer series, the pumps will handle virtually any job calling for the use of heavy material, paint, and buffing compounds, it is stated.

Pacer 25 is 2½-1 ratio and will handle medium heavy materials from buffing compounds to automobile sound deadeners.

Pacer 40 and Pacer 60 are designed to handle heavy materials such as cold process roofing, sound deadening material, mastic. Featuring a 4-1 and 6-1 ratio respectively, both are double acting to deliver material on both the up or down stroke. At 10 cycles, Pacer pumps will deliver five quarts or 1.25 g.p.m. At 20 cycles delivery is 2.5 g.p.m.

Pacer 250 and Pacer 400 are designed to handle paint applications. These pumps feature a 2½-1 and 4-1 ratio respectively.

Manufacturer: Binks Mfg. Co., 3118-40 Carroll Ave., Chicago 12, Ill.
For more data circle **29** on Reader Service Card

★ ★ ★

Automatic Buffing Machine

A rotary automatic polishing conveyor recently introduced by Ham-

TRUE BRITE BRASS SOLUTION

A foolproof solution which has been in use for over 6 years in light and heavy production.

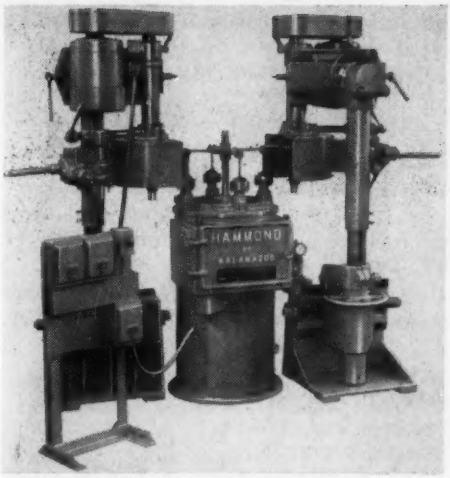
- Ready To Use—Just Add Water
- No Variance in Color
- Trouble-Free—Little Supervision Needed
- Low Cost—Additions only once a day

Available in a variety of colors. Will match your sample.

Write for technical bulletin and prices.

TRUE BRITE CHEMICAL PRODUCTS CO.
Box 31, Oakville, Conn.

For more data circle 377 on Postpaid Card



Hammond Model J21-4 Rotary Indexing Turret

mond Machinery Builders, Inc., may be used with one, two or three polishing or buffing heads.

This unit, designated Model J21-4, has four work holders, operates at 250 to 600 indexes per hour.

A lock available for this turret eliminates all movement of the table during the working cycle of this machine.

Bulletin No. 419, available from the manufacturer, contains additional details.

Manufacturer: Hammond Machinery Builders, Inc., 1622 Douglas Ave., Kalamazoo, Mich.

For more data circle **30** on Reader Service Card

★ ★ ★

Cleaner-Concentration Meter

An electrically operated meter recently introduced by the J. B. Ford Div., Wyandotte Chemicals Corporation, shows at a glance the concentration of chemical compounds used in soak cleaning tanks, spray washers, spray booth water, phosphatizing installations. The device eliminates the need for titrating solutions with each

Collect Dirt-Don't Spread It Around

The Dust-All TACK RAG collects dust, dirt and lint from surfaces before painting and fine finishing. Stays soft and tacky indefinitely. Leaves no surface film or residue. Non-combustible.

Made in 18"x36" size folded to 4½"x6", bulk packed or in individual glassine bags, also available in rolls to your specified yardage. Your selection of various weaves of cloth and amount of tack from very light to extra heavy.

MARD PRODUCTS, INC.

1020 E. TEN MILE ROAD • HAZEL PARK, MICHIGAN

Canadian Representative: Cromac Chemical Company, Ltd., Toronto-Montreal

For more data circle 378 on Postpaid Card

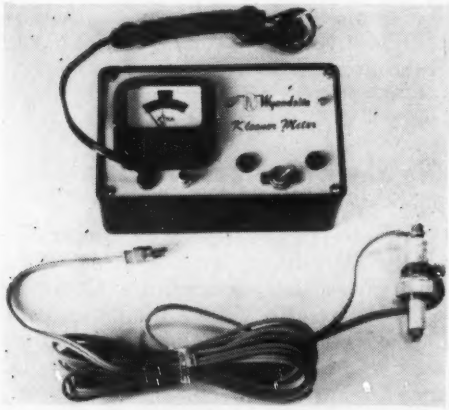
make-up and for periodic analysis to determine soluton strength.

Sheet F-2795, available from the manufacturer, gives complete details.

Manufacturer: J. B. Ford Div., Wyandotte Chemicals Corp., Wyandotte, Mich.

For more data circle **31** on Reader Service Card

★ ★ ★

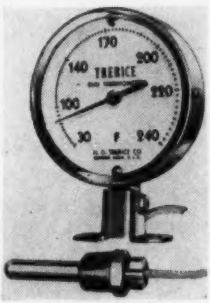


Kleener Meter: shows solution concentration

Dial Thermometers

A line of vapor-actuated dial thermometers has been announced by H. O. Trerice Co., Detroit, Michigan.

Available in twelve temperature ranges between minus 40 and 450 deg. F., the dial thermometers are offered with a wide choice of special mountings including an adjustable angle type which permits facing the dial in any vertical position throughout a 200 deg. arc. Case and ring are polished chrome plated steel; dial face is 3½ inches diameter, finished in white baked enamel with black markings.



Dial Thermometer

Standard equipment includes a 5-foot bright tin-plated double bronze braided armored tube system with union-connected copper bulb. Options include special materials for bulbs, sockets and tube systems. The units are also available with liquid-filled tube systems with evenly graduated dials.

Manufacturer: H. O. Trerice Co., 1427 W. Lafayette Blvd., Detroit 16, Michigan.

For more data circle **32** on Reader Service Card

★ ★ ★

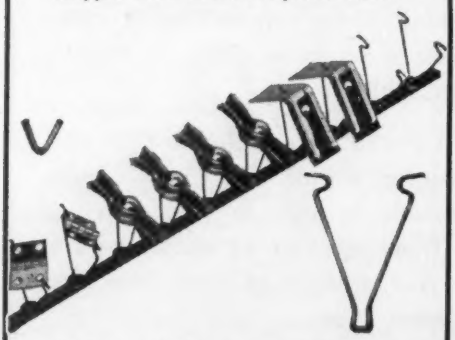
Circular-Spray Nozzle

An extra-wide angle, circular-spray nozzle for industrial applications has been announced by Wm. Steinen Mfg. Co. The Steinen Span-Jet nozzle was developed for spraying or washing the inside of tubular units.

VACUUM METALLIZING

We Manufacture

Racks, Spring Wire Forms, Staples and Other Accessories for the Vacuum Metallizing Trade. Shipped from Stock or Special Order.



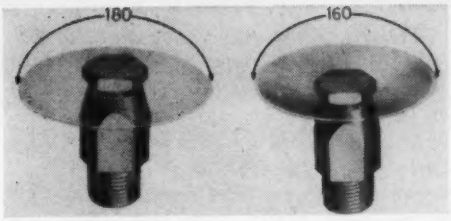
Write for Information and Samples

D & W TOOL & FINDINGS, INC.

52 SALEM ST • PROVIDENCE 7, R. I.

STUART 1-4554

For more data circle 379 on Postpaid Card



Wide-angle, circular-spray nozzles; 180 deg. flat, 160 deg. hollow-cone spray pattern

The Span-Jet is made in two styles to provide either a 180 deg. flat, circular spray pattern or a 160 deg. hollow-cone spray pattern. The nozzles are made in capacities from 0.75 to 10 g.p.m. at 40 p.s.i. pressure. The standard Span-Jet nozzles are made to fit pipe sizes of ⅛, ¼, and ⅜ inch, and are available in brass, 303 stainless steel or special materials.

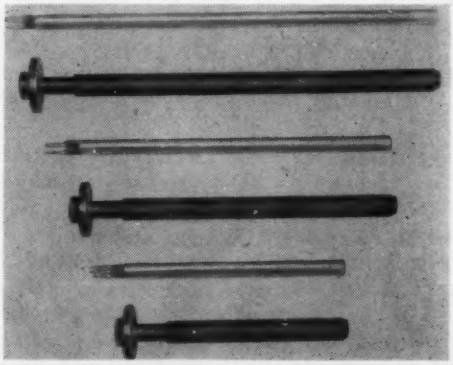
Manufacturer: Wm. Steinen Mfg. Co., 43 Bruen St., Newark, N. J.

For more data circle **33** on Reader Service Card

Immersion Heater

An electric immersion heater with a cast insert that can be easily removed from the outer shell assembly makes it possible to change the insert without draining the tank.

Inserts are available for pipe and



Immersion Heater Inserts: remove them from the shell for cleaning without draining tank

Consult our staff, about your plating problems.

Rhodium
ELECTROPLATING SOLUTIONS

Technological knowledge acquired through many years of experience, plus special processes and equipment, assure the high quality of our Rhodium Plating Solutions.

Recommended for contact surfaces of switches, waveguide parts and other electrical applications, such as printed circuits... Can be applied in extremely heavy deposits, up to 100 milligrams per square inch.

Rhodium plating provides the advantages of whiteness, lustre and corrosion resistance of a precious metal.

Since 1901

SIGMUND COHN MFG. CO., INC.
121 SOUTH COLUMBUS AVENUE · MOUNT VERNON, NEW YORK

For more data circle 380 on Postpaid Card

finned-tube heaters. Made in 7-10-14 kilowatts, 220, 440 and 550 volts; single and 3 phase; for 3 inch pipe and up, Schedule 40, with lengths from 2 to 6 ft.

Manufacturer: Thermel, Inc., 9400 Robinson Rd., Franklin Park, Ill.

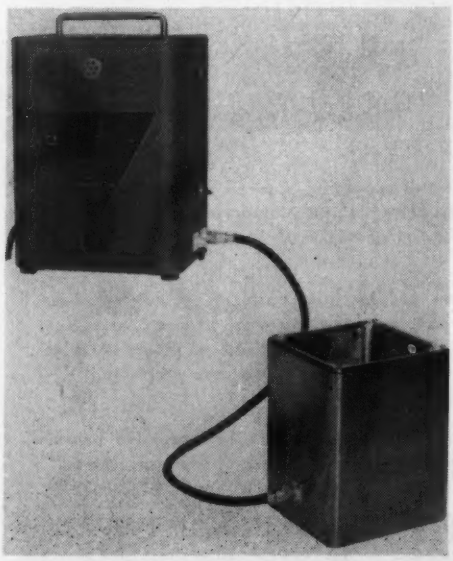
For more data circle **34** on Reader Service Card

★ ★ ★

Ultrasonic Cleaning Unit

Ultracleaner "60", produced by the Lawrence Manufacturing Corp., is said to be an efficient, rugged and compact ultrasonic cleaner. Features include a selector switch that controls the operation of 2 tanks when a double step is required, or when two different solutions are desired. A load selector switch permits operation of two submersible transducers in a 5-gallon tank, simultaneously.

Ultracleaner "60" is particularly applicable to the cleaning of complex parts with blind holes.



Ultrasonic Generator and Cleaning Tank

The transducerized ¾-gallon tank is 6 by 6 by 6 inches. The lightweight generator operates on a frequency of 40 kc.

Manufacturer: Lawrence Mfg. Corp., Belleville, N. J.

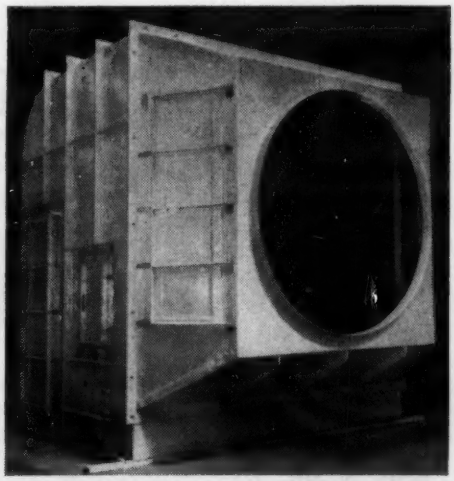
For more data circle **35** on Reader Service Card

★ ★ ★

All-Plastic Fume Washer

Description: A large solid plastic structure built for exhausting and "scrubbing" corrosive chemical fumes is 12 feet high and has a seven-foot-diameter outlet. This washer was constructed of a special epoxy plastic reinforced with glass fiber.

Since all parts are plastic, the structure requires no painting or maintenance in the portions exposed to outside weather.



Large All-Plastic Fume Scrubber: lightweight

The light weight of this plastic unit allows placement on roofs without exceeding roof-loading limits.

Manufacturer: Heil Process Equipment Corp., Cleveland 11, Ohio.

For more data circle **36** on Reader Service Card

JULY, 1959

1	17	33	49	65	81	97	113	129	145	301-2nd Cov.	330	346	362	378	394	410	426	442
2	18	34	50	66	82	98	114	130	146	302-3rd Cov.	331	347	363	379	395	411	427	443
3	19	35	51	67	83	99	115	131	147	303-4th Cov.	332	348	364	380	396	412	428	444
4	20	36	52	68	84	100	116	132	148	304	317	333	349	365	381	397	413	429	445
5	21	37	53	69	85	101	117	133	149	305	318	334	350	366	382	398	414	430	446
6	22	38	54	70	86	102	118	134	150	306	319	335	351	367	383	399	415	431	447
7	23	39	55	71	87	103	119	135	151	307	320	336	352	368	384	400	416	432	448
8	24	40	56	72	88	104	120	136	152	308	321	337	353	369	385	401	417	433	449
9	25	41	57	73	89	105	121	137	153	309	322	338	354	370	386	402	418	434	450
10	26	42	58	74	90	106	122	138	154	310	323	339	355	371	387	403	419	435	451
11	27	43	59	75	91	107	123	139	155	311	324	340	356	372	388	404	420	436	452
12	28	44	60	76	92	108	124	140	156	312	325	341	357	373	389	405	421	437	453
13	29	45	61	77	93	109	125	141	157	313	326	342	358	374	390	406	422	438	454
14	30	46	62	78	94	110	126	142	158	314	327	343	359	375	391	407	423	439	455
15	31	47	63	79	95	111	127	143	159	315	328	344	360	376	392	408	424	440	456
16	32	48	64	80	96	112	128	144	160	316	329	345	361	377	393	409	425	441	457

NAME _____ POSITION _____

COMPANY _____

STREET _____

CITY _____ ZONE _____ STATE _____

PRODUCTS MANUFACTURED _____

Circle numbers (NOT PAGE NUMBERS) to request information

JULY, 1959

1	17	33	49	65	81	97	113	129	145	301-2nd Cov.	330	346	362	378	394	410	426	442
2	18	34	50	66	82	98	114	130	146	302-3rd Cov.	331	347	363	379	395	411	427	443
3	19	35	51	67	83	99	115	131	147	303-4th Cov.	332	348	364	380	396	412	428	444
4	20	36	52	68	84	100	116	132	148	304	317	333	349	365	381	397	413	429	445
5	21	37	53	69	85	101	117	133	149	305	318	334	350	366	382	398	414	430	446
6	22	38	54	70	86	102	118	134	150	306	319	335	351	367	383	399	415	431	447
7	23	39	55	71	87	103	119	135	151	307	320	336	352	368	384	400	416	432	448
8	24	40	56	72	88	104	120	136	152	308	321	337	353	369	385	401	417	433	449
9	25	41	57	73	89	105	121	137	153	309	322	338	354	370	386	402	418	434	450
10	26	42	58	74	90	106	122	138	154	310	323	339	355	371	387	403	419	435	451
11	27	43	59	75	91	107	123	139	155	311	324	340	356	372	388	404	420	436	452
12	28	44	60	76	92	108	124	140	156	312	325	341	357	373	389	405	421	437	453
13	29	45	61	77	93	109	125	141	157	313	326	342	358	374	390	406	422	438	454
14	30	46	62	78	94	110	126	142	158	314	327	343	359	375	391	407	423	439	455
15	31	47	63	79	95	111	127	143	159	315	328	344	360	376	392	408	424	440	456
16	32	48	64	80	96	112	128	144	160	316	329	345	361	377	393	409	425	441	457

NAME _____ POSITION _____

COMPANY _____

STREET _____

CITY _____ ZONE _____ STATE _____

PRODUCTS MANUFACTURED _____

FIRST CLASS
PERMIT No. 1702
CINCINNATI, OHIO

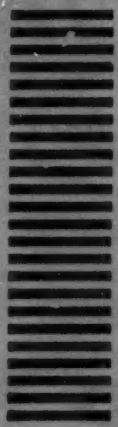
BUSINESS REPLY MAIL
No Postage Stamp Necessary If Mailed in the United States

POSTAGE WILL BE PAID BY —

Products Finishing

431 MAIN ST.

CINCINNATI 2, OHIO



Your Monthly Source For Finishing Ideas

FIRST CLASS
PERMIT No. 1702
CINCINNATI, OHIO

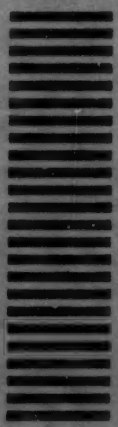
BUSINESS REPLY MAIL
No Postage Stamp Necessary If Mailed in the United States

POSTAGE WILL BE PAID BY —

Products Finishing

431 MAIN ST.

CINCINNATI 2, OHIO



PRODUCT LITERATURE

40. Plating Process Conveyor
Literature on the Abbey-Matic system of automatically conveying racks or barrels through various tanks and treatments. This equipment makes it possible to set each carrier for an individual cycle by inserting a keyed metal card into the carrier. This card tells the carrier which tanks to lower into, which to skip. Many possibilities for skipping stations, leap-frogging cells that are processing other carriers, and so on. Abbey Process Automation, Inc., 37-01 48th Ave., Long Island City 1, N. Y.

41. Sheet Polishing Mills
An eight-page booklet describes and illustrates Acme sheet polishing mills. Includes information on machine operation, typical applications, features, production setups. Acme Manufacturing Co., 1400 E. Nine Mile Rd., Detroit 20, Michigan.

42. Pre-Cut Paint Masks
Bulletin No. 160-c describes and illustrates self-sticking pre-cut protective masks. W. H. Brady Co., 746 W. Glendale Ave., Milwaukee 9, Wisconsin.

43. Adhesion Promoters
Leaflet describes two products that are useful in treating metal prior to painting: Phospray, a cold spray bonding solution applied with ordinary spray equipment to all metals except aluminum; and Phosteel, a hot-dip bonding agent for heavy surface coatings of paint, lacquer, and other organic finishes applied to iron, steel, aluminum and zinc. The Du-Lite Chemical Corporation, 20 River Rd., Middletown, Conn.

44. Buffing Compound Remover
Information on Enthol 230, a mildly alkaline liquid detergent that is formulated for removing buffing compounds prior to plating or other finishing operations. Enthone, Inc., 442 Elm St., New Haven, Conn.

45. Refrigerated Degreaser
Folder on the Erie Degreaser, which has a refrigeration unit that automatically controls solvent vapor level regardless of outside atmospheric conditions. Erie Degreaser Co., Division of Erie Engine & Mfg. Co., Erie, Pa.

46. Automatic Plating Conveyor
Information on a low-cost flexible-cycle automatic plating machine, the Flexi-matic. Hanson-Van Winkle-Munning Co., Matawan, N. J.

47. Nickel Plating Processes
An eight-page booklet describes several nickel plating processes, includes data on equipment needed, operating conditions for each process, and so on. Harshaw Chemical Co., 1945 E. 97th St., Cleveland 6, Ohio.

48. Metal Preparation Service Plan
Details on Pennsalt's service plan, which includes aid in training personnel, installation of new equipment when needed, advice on how to save money on materials and compounds, emergency service. Metal Processing Department, Pennsalt Chemicals Corporation, Three Penn Center, Philadelphia 2, Pa.

49. Rodium Plating Facts
A 20-page booklet entitled *Rhodium Electroplating Processes* has been revised and reprinted. It tells where, when and how to use rhodium electroplates to improve product performance and reliability in electronic and other industrial applications. Detailed information on bath preparation and control, determination of rhodium in plating solutions; equipment required, current densities, general operating instructions; cost-calculating chart. Sel-Rex Corporation, 75 River Rd., Nutley, N. J.

50. Adjustable-Joint Spray Nozzles
Reference data on adjustable joints for spray nozzle installations. Bulletin 97. Typical applications for these products: washing, coating, rinsing. Ball-and-socket design permits swivelling nozzle through 50-degree arc. Spraying Systems Co., 3229 Randolph St., Bellwood, Ill.

51. Aerosols for Industry
New booklet catalogs a complete line of aerosol-packaged products for industrial use: color code enamels, marking enamels, lubricants, primer-surfacers, clear plastic coatings, other products. Sprayon Products, Inc., 2077 E. 65th St., Cleveland 3, Ohio.

52. Automatic Plating Machines
An eight-page bulletin on Stevens automatic rack processing and plating machines for electroplating, anodizing, stripping, cleaning, phosphatizing and similar immersion processes. Frederic B. Stevens, Inc., 1800 18th St., Detroit 16, Michigan.

53. Cleaners for Metal Finishing
Bulletin describes the Wyandotte line of products for barrel finishing, cleaning and phosphatizing, deoxidizing, electrocleaning, neutralizing, oil and water absorption, paint spray booth maintenance, paint stripping, rust and scale removal, soak cleaning, protection against rust, and washing machine cleaning. Gives detailed information on various products used in each of these processes. J. B. Ford Div., Wyandotte Chemicals Corp., Wyandotte, Mich.

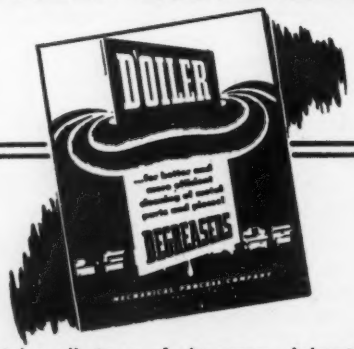
54. Stable Degreasing Solvent
Information on Blacosolv trichlorethylene degreasing solvent, which incorporates entirely new stabilizers that prevent breakdown and acid formation. G. S. Blakeslee & Co., 1844 S. Laramie, Chicago 50, Ill.

55. Fact Book on Ultrasonic Cleaning
Bulletin S-200, a 24-page illustrated booklet on ultrasonic cleaning, describes typical applications and basic principles of this cleaning method. Design information occupies a large part of this book. Batch immersion, conveyor, and multi-stage systems are considered. Information on solutions and chemicals recommended for ultrasonic cleaning is included. Branson Ultrasonic Corp., Brown House Rd., Stamford, Conn.

56. Washing Machine
Bulletin 107 describes the Vibra-Washer, an automatic parts washer and metal conditioning machine which employs a vibrating work carrier that automatically conveys parts through cleaning or conditioning baths. Simplicity Engineering Co., Durand 25, Mich.

57. Epoxy Color Pastes and Compounds
Booklet describes Clinton epoxy resin compounds and color dispersions. The Clinton Co., 1210 Elston Ave., Chicago 22, Illinois.

Send for this folder on D'OILER DEGREASERS



Contains all types of degreasers: Laboratory, Two-Dip, Three-Dip, Vapor Spray, Barrel Type, Automatic, Semi-Automatic, Driers, Stills and Specials.
When the job needs a degreaser . . . there's a D'OILER for the job.

mechanical process co., inc.
392 VALLEY ST. • SOUTH ORANGE, N. J.

For more data circle 381 on Postpaid Card

58. Face Mask
Information on the Flex-A-Prene face mask, which protects the wearer against paint pigments and solvent fumes. Flexo Products, Inc., 24864 Detroit Rd., Westlake, Ohio.

59. Paint Spray Booth Water Additive
Case-history reports on Mogul M-55, a cleaner that is used to make cleaning and maintenance of water-wash spray booths easier. North American Mogul Products Co., Standard Bldg., Cleveland 13, Ohio.

60. Barrel Finishing Booklet
Booklet describes barrel finishing equipment, materials, how to use them. Abbott Ball Co., 14 Railroad Ave., Hartford 10, Conn.

61. Clear Semi-Gloss Lacquer
Information on Agateen No. 2B semi-gloss lacquer. Agate Lacquer Mfg. Co., Inc., 11-13 43rd Rd., Long Island City, New York.

62. Chromate Conversion Coatings
Handy reference file on Iridite chromate conversion coatings. Allied Research Products, Inc., 4004-06 E. Monument St., Baltimore 5, Maryland.

151. Prepaint Conversion Coatings for Aluminum
Bulletin 1424 A describes the uses of Amchem Alodine, a chemical conversion coating that forms an amorphous coating which becomes an integral part of the metal, improves corrosion resistance and paint bond. Amchem Products, Inc., Ambler, Pa.

63. Alloy Anodes for Acid Copper Plating
Reprint of a technical paper that describes a synthesized anode containing small quantities of phosphorous, tellurium, selenium and silver. The American Brass Co., Waterbury 20, Conn.

64. Cut Anode Waste
Information on reducing waste of costly anodes by purifying plating baths with activated carbon so as to reduce rejects. Chemicals Div., Atlas Powder Co., Wilmington 99, Del.

65. Chromic Acid
Information on BFC chromic acid. Better Finishes & Coatings, Inc., 268 Doremus Ave., Newark 5, N. J.

66. Modular Electrostatic Spray
Bulletin describes modular electrostatic spray systems, self-contained packages that include all the equipment and accessories necessary to apply paint by electrostatic spraying. Binks Manufacturing Co., 3118-40 W. Carroll Ave., Chicago 12, Illinois.

Circle numbers on postpaid card opposite page 128 to obtain free literature

67. Tack Cloth
Literature on treated cloths that pick up dust and lint prior to paint finishing. Bond Chemical Products Co., 2639 N. Clybourn Ave., Chicago 14, Ill.

68. Polishing and Buffing Compositions
Information on Buckingham buffing and polishing compositions. The Buckingham Products Co., 14100 Fullerton Ave., Detroit 27, Mich.

69. Complete Finishing Systems
Catalog No. 200 describes company's design, fabrication and installation services for complete finishing systems. Includes information on equipment for pre-paint treatment, paint application, paint drying and baking, make-up air and exhaust systems. Contains descriptions of typical installations and detailed information on individual components. Cincinnati Cleaning & Finishing Machinery Co., 2008 Hageman St., Cincinnati 41, Ohio.

70. Fused-Quartz Infrared Ovens
Bulletin RLC-201 shows typical applications of Clepco Fused Quartz Infrared ovens, lists features of these ovens, illustrates portable ovens, horizontal ovens. The Cleveland Process Co., 1965 E. 57th St., Cleveland 3, Ohio.

71. Rhodium Plating Instructions
Handy pocket-sized booklet gives complete instructions for rhodium plating, includes data on solution preparation, work preparation, temperatures and current densities, tanks, anodes, and so on. Sigmund Cohn Mfg. Co., Inc., 121 S. Columbus Ave., Mount Vernon, N. Y.

72. Aluminum Etchant
Technical data sheet on Cowles AK tells how this formulation works on all aluminum alloys, prevents build-up of scale by means of a special sequestering agent. Cowles Chemical Co., 7016 Euclid Ave., Cleveland 3, Ohio.

73. Bronze Powders
Color card shows 33 colors of bronze-like finishes that can be produced from stock Cres-Lite bronze powders. Crescent Bronze Powder Co., 118 W. Illinois St., Chicago 10, Ill.

74. Metallizing Material
Staples made of extremely pure aluminum and prepared for use in vacuum metallizing are described in literature available from D & W Tool & Findings, Inc., 52 Salem St., Providence 7, R. I.

UNIQUE PUMP DESIGN
IN PLASTIC
NO STUFFING BOX
OR SHAFT SEALS
ELIMINATES SHAFT LEAKAGE, SCORING, CORROSION
NEW LOW-MAINTENANCE FEATURES:

■ No shaft seals ■ No metal parts in contact with fluid ■ Simple, sturdy, minimal maintenance ■ Flexible liner absorbs abrasive action of suspended solids ■ Non-agitating ■ Non-contaminating ■ Self-priming; high vacuum ■ Operates wet or dry ■ Capacity range 1/3 to 40 Gallons Per Minute

Vanton Plastic Pumps have for years been handling the toughest pumping problems in process plants, pilot operations, and laboratories. They do the routine jobs better, and save overall costs as well! Low-cost, versatile, simply but carefully engineered, their combination of radically new design principle plus plastic minimizes maintenance, gives complete protection against leakage, corrosion, contamination, abrasion.

OPERATES LIKE SQUEEGEE ON RUBBER HOSE: all fluid moves in channel between outside of flexible rubber or synthetic liner, and inside of molded plastic or stainless bodyblock. Pumping mechanism is rotor mounted on eccentric shaft inside liner. At each revolution it creates progressive squeegee action on fluid trapped between liner and housing.

Plastic Materials Include: PVC, high-temperature polyethylene, Teflon (DuPont), Buna N, bakelite, etc., even stainless steel to handle any commercial corrosive.

WRITE FOR FREE CATALOG TODAY
VANTON PUMP & EQUIPMENT CORP.
DIVISION OF COOPER ALLOY CORP., HILLSIDE, N.J.
SPECIALISTS IN PLASTIC FLUID HANDLING, PLASTIC PUMPS, VALVES, PIPING, FITTINGS, SPECIALTIES

For more data circle 382 on Postpaid Card

75. Fans
Bulletin DB 45-58 catalogs a complete line of air-moving equipment, including units specially designed for exhausting corrosive fumes. DeBothezat Fans Div., American Machine & Metals, Inc., East Moline, Ill.

76. Degreasers
A four-page folder on VS-800 Series vapor-spray degreasers describes a line of open-top degreasers. Lists important features, includes diagrams to show working parts. Detrex Chemical Industries, Inc., Box 501, Detroit 32, Mich.

77. Titanium Anodizing Cylinder
Data sheet describes and illustrates an all-titanium anodizing cylinder that is useful in bulk processing of bolts, rivets, screws. Requires no stripping, resists acids. Detroit Industrial Process Co., 9301 French Rd., Detroit 13, Mich.

78. Special Spray Equipment
Spray equipment required to apply Glid-Tile, a tile-like polyester finish, is listed and described in catalog sheet M-1052. The finish is said to provide appearance comparable to ceramic tile. This catalog lists the spray guns, tanks, compressors and accessories that have been tested and proved for this application. DeVilbiss Co., Toledo 1, Ohio.

79. Cleaner-Phosphatizer
A four-page folder on Divobond, a material that cleans and phosphatizes in one operation, produces no scale. Diversey Corporation, 1820 Roscoe St., Chicago 13, Illinois.

80. Methylene Chloride
Information on methylene chloride, for use in paint and varnish removers and for cold cleaning. Dow Chemical Co., Midland, Mich.

INCREASE PRODUCTION! CUT COSTS!
Your paint is factory fresh ready for use when mixed in a
MIRACLE PAINT MIXER
5 GAL. MODEL
¼ Pt. to 55 Gal. Mixers Available
Write to:
MIRACLE PAINT REJUVENATOR CO.
500 NORTH ROBERT STREET, ST. PAUL 1, MINNESOTA
For more data circle 383 on Postpaid Card

81. Drying and Baking Booklet
Data Booklet D117 shows how heating units and ovens of all sizes and shapes can be built at low cost from prefabricated interlocking infrared sections. Dry Clime Lamp Corp., Greensburg, Indiana.

82. Stripper
Folder describes No. 153 Stripper, a nonflammable volatile solvent-type stripper with very little toxicity. Has excellent penetrating properties, is said to be useful in removing coatings that are difficult to remove, such as melamines, epoxies, vinyls, plating rack coatings. Dytex Chemical Co., 140 India St., Providence 3, R. I.

83. Electropolishing Stainless Steel
Literature on baths for electropolishing stainless steel includes operating instructions for two of these baths. Electro-Glo Co., 621 S. Kolmar Ave., Chicago 24, Ill.

84. Flexible Contact Wheels
Catalog No. 12 describes Formax flexible contact wheels for grinding, polishing, sanding and finishing with coated abrasive belts. These wheels are said to produce sharper, faster cutting action plus finer and smoother work surface. Formax Manufacturing Corp., Detroit 7, Mich.

85. Tumbling Media
Information on preformed tumbling media and abrasive products. Over 200 sizes and bonds available. Fortune Industries, Inc., 11770 Dexter Rd., Chelsea, Mich.

86. Portable Infrared Units
Folio 55-101 describes and illustrates several types and sizes of portable infrared drying units for use in drying, baking and so on. Fostoria Corp., Fostoria, Ohio.

87. Fusion-Bonded Hard Finish
An eight-page folder describes company's service of "Fusecoating," a process for fusion bonding of tungsten carbide to a base metal with a hard alloy binder metal. Includes information on shapes that can be coated, base metal limitations, applications, and Fusecoating of buffing fixtures. Fusion Metal Coating Co., 25493 W. Eight Mile Rd., Detroit 40, Mich.

88. Heat-Fusible Plastisol
Data on new XL-12 heat-fusible plastisol, a formulation that bakes at 365-375 for eight hours without decomposition or color change; is impervious to plating solutions; resists cutting and abrasion. The G. S. Plastics Co., 15583 Brookpark Rd., Cleveland 35, Ohio.

89. Laboratory Equipment Catalog
Catalog lists laboratory instruments, tells what each will do. Includes instruments for measuring color, reflectance, gloss, haze; viscosity, consistency, oil-testing; heating and cooling baths; humidity and salt spray cabinets; film applicators; film-thickness gages; tensile-strength gages; instruments for measuring drying time, hardness, flexibility, adhesion, washability; mills, mixers, stirrers; centrifuges, many others. Gardner Laboratory, Inc., Bethesda 14, Maryland.

90. Roller Coating Equipment
Information on Gasway equipment for roller coat finishing. Gasway Corporation, 6463 N. Ravenswood Ave., Chicago 26, Illinois.

91. Finishing Systems
Twelve pages of information on the company's finishing systems and components for finishing systems. Includes information on ovens, furnaces, air-supply systems, special mechanical handling systems, spray booths, dust collectors. Granco, Inc., 317 32nd St., S.W., Grand Rapids 8, Mich.

92. Centrifugal Painting Machinery
Bulletin tells how the Norris Gyromat operates, what it will do, describes its advantages. The Gyromat Corp., Kings Highway Cut-off, Fairfield, Conn.

93. Abrasive Belt Polishing Machines
Bulletin 337-T describes several models of abrasive belt grinders, buffers, polishers, tells what each machine will do, its advantages, general specifications. Hammond Machinery Builders, Inc., 1622 Douglas Ave., Kalamazoo, Mich.

94. Used Polishing Equipment
Information on used buffing and polishing machines. J. Holland & Sons, Inc., 487 Keap St., Brooklyn 11, N. Y.

95. Trichlorethylene
Form 1184-B gives specifications, description and uses for Nialk Trichlorethylene, metal degreasing grade. This solvent is useful in general degreasing operations, can also be used in cleaning of rocket and missile components. Hooker Chemical Corporation, 1405 Union St., Niagara Falls, N. Y.

96. Rinse Aid
Information on Rins-Aid, an additive for rinse water. It prevents staining and tarnishing and hastens drying. R. O. Hull & Co., Inc., 1304 Parsons Ct., Rocky River 16, Ohio.

97. Brass Additive
Information on an additive formulated to increase efficiency and throwing power of brass plating solutions. Jelco Finishing Equipment Corp., 153 E. 26th St., New York 10, N. Y.

98. Wood Tanks
Information on wood tanks for pickling and plating. Kalamazoo Tank & Silo Co., 1571 Harrison St., Kalamazoo, Mich.

99. Alkaline Soak Cleaner
Technical data on Kelite Supersolv, a soak cleaner used prior to electrocleaning. This material is a non-etch, non-passivating alkaline soak cleaner for use on zinc-base die-cast parts. Kelite Corporation, 81 Industrial Rd., Berkeley Heights, N. J.

100. Plating Course
Information on a correspondence course in electroplating. Joseph B. Kushner Electroplating School, P. O. Box 2066P, Station "D," Evansville 14, Indiana.

101. Baking and Drying Equipment
Catalog No. 560 describes and illustrates various types of baking and drying equipment. The Lanly Co., Cleveland, Ohio.

102. Tack Cloth
Information on specially treated cloths that are used for removing dust and lint just prior to paint finishing operations. Mard Products, Inc., 1020 E. Ten Mile Rd., Hazel Park, Mich.

For more data circle 384 on Postpaid Card

103. Pearlescent Finishes
Information on Nacromer YNC, an additive that is used in standard organic finishes to produce a pearlescent finish. The Mearl Corporation, 41 E. 42nd St., New York 17, N. Y.

104. Degreasers
Catalog describes laboratory, two-dip, three-dip, vapor-spray, barrel-type automatic, and semi-automatic degreasers. Mechanical Process Co., Inc., 392 Valley St., South Orange, N. J.

105. Crack-Free Chromium
Bulletin CFC-2 describes the Unichrome Crack-Free chromium plating process, includes photomicrographs to show structure of the deposits. These deposits are said to improve corrosion resistance, have other advantages. Metal & Thermit Corporation, Rahway, N. J.

106. Paint Mixer
Data sheet on Miracle paint rejuvenators, which mix paint without removing the lid from the container, by shaking the can vigorously. Miracle Paint Rejuvenator Co., 500 N. Robert St., St. Paul 1, Minnesota.

107. Drum-Handling Tools
Literature on a line of drum-handling tools and equipment: drum upenders, drum wrenches, carts and so on. Morse Mfg. Co., Inc., 762 W. Manlius St., E. Syracuse, N. Y.

108. Metal Preparation Products
Literature describes products for cleaning, rust removal, phosphatizing, conversion coating and cold forming. Neilson Chemical Co., 2304 Gainsboro, Detroit 20, Ferndale, Mich.

109. Centrifugal Dryer
Four-page folder gives complete details on the Model 20 New Holland Kreider centrifugal dryer. New Holland Machine Co., Dept. PF, New Holland, Pa.

For more data circle 385 on Postpaid Card

110. Aluminum Cleaner
Complete details on Alkalume AC No. 1, a recently introduced cleaner formulated for cleaning aluminum prior to plating, anodizing, etching. Northwest Chemical Co., 9310 Roselawn, Detroit 4, Mich.

111. Setting Up Polishing Wheels and Belts
Form 1340, a 45-page booklet on methods of setting up polishing wheels and belts for metal finishing operations, includes detailed instructions on abrasive grains, glue and its preparation, types of polishing wheels and their fields of use, correct drying of polishing wheels, handling and storage, other related subjects. Norton Co., Worcester 6, Mass.

112. Aluminum Deoxidizer
Oakite Compound No. 34 removes smut, oxides and stains from aluminum. Bulletin tells how to use, describes typical applications. Oakite Products, Inc., 20 Rector St., New York 6, N. Y.

113. Cold Phosphatizing
Details on cleaners and phosphatizing products that will operate at temperatures 40 to 75 deg. F. cooler than conventional systems. Parker Rust Proof Co., 2172 E. Milwaukee Ave., Detroit 11, Mich.

114. Thermosetting Acrylic Enamel
Brochure contains information on Duracron thermosetting acrylic enamel, tells how this coating can reduce manufacturing costs. Pittsburgh Plate Glass Co., Industrial Finishes Div., 1 Gateway Center, Pittsburgh, Pa.

115. Clear Lacquers
Data on clear lacquers especially formulated to be used in protecting highly polished metals and those that tarnish easily. Randolph Products Co., Carlstadt, New Jersey.

116. Electrostatic Hand Gun
A 4-page folder tells how the new Ransburg hand-held electrostatic spray gun works, what it will do. Includes photos and diagrams of the new gun. Ransburg Electro-Coating Corp., P. O. Box 23122, Indianapolis 23, Indiana.

117. Coatings for Steel
Information on the company's line of organic coatings for steel. These products are said to offer greater resistance to temperature, excellent color control, greater tensile strength. Reynolds Chemical Products Co., Whitmore Lake, Mich.

118. Filter Pump Units
Bulletin 202. Data on corrosion-proof pumps and filter units for filtering corrosive plating solutions. Includes information on construction features, solutions that can be filtered, rate of filtration, operation, back-washing and reversal switch. Sethco Manufacturing Co., 2292 Babylon Turnpike, Merrick, L. I., N. Y.

119. Chromium Chemicals
Bulletin 52 contains technical information on chromic acid and other products. Solvay Process Div., Allied Chemical Corp., 61 Broadway, New York 6, N. Y.

120. Save Dirty Solvents
Data on the company's service of reclaiming dirty solvents. Solvents Recovery Service, Inc., 1025 Broad St., Newark 2, New Jersey.

121. Technical Data on Hot Spray
Revised edition of the booklet "Why Hot Spray?" includes technical information on the advantages and possibilities of hot spray painting process. Spee-Flo Co., 6614 Harrisburg, Houston 11, Texas.

122. Finishing Systems
A 36-page book describes and illustrates complete finishing systems and components such as washers, dryers, bake ovens, flow coat systems, dip-painting systems, spray painting systems, others. Includes diagrams of several systems, comparison of operating costs for Spra-Con systems vs. other types. Also has a page of useful engineering formulas and constants. The Spra-Con Company, 3600 Elston Ave., Chicago 18, Ill.

123. Liquid Buffing Compound
Data sheet points out the advantages of using Liquispray in cost savings and increased efficiency and quality. The Stutz Co., 4410 Carroll Ave., Chicago 24, Ill.

124. Stripping Copper
A 10-page booklet describes Liquid Sulphur, tells exactly how to use this material for removing deposits of copper. Sulphur Products Co., Inc., 621 W. Pittsburgh St., Greensburg, Pa.

125. Etch Primer
Data on Gripalloy, an etch primer available in black and colors. Used as primer or finish coat. Tenax, Newark 5, N. J.

126. Cob Grit for Blasting, Tumbling
Information on corn cob grits that are used as tumbling media and in blast cleaning. Ti-Co Industries, Inc., P. O. Box 185, Tipton, Indiana.

127. Belt Sanders
A 4-page folder describes Model TOP Timesaver "Speedbelt" Sander. It details the construction features of this unit, gives specifications for four models. Several applications are shown. Timesaver Sanders, P. O. Box 7446, Robbinsdale Station, Minneapolis 22, Minn.

128. Brass Plating Solution
Technical bulletin on True Brite brass solution, which is available in a variety of colors. True Brite Chemical Products Co., Box 31, Oakville, Conn.

129. Soluble Precious Metals for Electroplating
Folder lists gold, rhodium, palladium, platinum, silver, and alloy precious metal plating solutions available from stock. Technic, Inc., 39 Snow St., Providence 1, Rhode Island.

130. Bright Nickel
Technical Bulletin No. NP-514 tells how to operate Udylite Bright Nickel Process No. 514. Includes complete data on functions of additives, temperature, pH, suggestions for avoiding troubles. The Udylite Corporation, Detroit 11, Mich.

ANODES

UNIVERTICAL
High Purity
•
Be Ahead of the Rest
GET THE BEST!
•
You Can Be Sure of
QUALITY
SERVICE
and VALUE

UNIVERTICAL
CORPORATION
14841 Meyers Rd., BRoadway 3-2000, Detroit 27, Mich.

For more data circle 386 on Postpaid Card

Circle numbers on postpaid card opposite page 128 to obtain free literature

131. Plastic Pump
Details on the Vanton sealless plastic pump, which resists plating corrosives, has no stuffing boxes, shaft seals, valves or gaskets, no metal parts in contact with the fluid being pumped. Vanton Pump Div., Cooper Alloy Corp., Hillside, New Jersey.

132. Copper Anodes
Information on "Phosphor-Brite" rolled copper anodes for acid copper plating baths. Univertical Corp., 14841 Meyers Rd., Detroit 27, Mich.

133. Disposable Spray Booth Air Filters
Folder describes and illustrates the use of RP paint arrestors, disposable filter pads that are used in spray booths to remove paint solids from exhaust air. Research Products Corp., Dept. 38, Madison 10, Wisconsin.

134. Protect Polished Parts
Folder shows typical applications of Neotex neoprene rubber mesh matting, a protective cover or liner for baskets, tables, benches and so on — wherever delicate or easily marred parts are being processed. Research Products Corp., Dept. 76, Madison 10, Wisconsin.

135. Barrel Finishing Machines
New catalog illustrates and gives complete details on all Rampe's barrel finishing machines, including 30 X 32, Rampe's newest, heavy-duty machine. Rampe Mfg. Co., 14915 Woodworth Ave., Cleveland 10, Ohio.

136. Polishing Machines
Information on tandem-roll horizontal machines for cut down and finishing of sheets, plates, extrusions, trim. Central Machine Works, 72 Commercial St., Worcester 8, Mass.

137. Centrifugal Coaters
Four-page folder gives complete details on Model 20 New Holland Kreider centrifugal dryer. Ronci Machine Co., a Division of F. Ronci Co., Inc., 2 Atlantic Blvd., Centerdale 11, R. I.

For more data circle 387 on Postpaid Card

138. Metallic Paints
Information on high-gloss ready-mixed baking enamels that simulate the appearance of highly polished plating. O'Neal Paint Products, Inc., P.O. Box 2694, Cleveland 7, Ohio.

139. Acid Bright Gold
Technical report on Orosene 999, a 24K acid bright gold electroplating bath. Formula, preparation, operating data, replenishment instructions, list of advantageous features. Technic, Inc., 39 Snow St., Providence 1, R. I.

140. Buffs
Data sheet describes Buff Type No. 20-RD for finishing stainless steel, brass and other metals. Geo. R. Churchill Co., Inc., Dept. PF, Hingham, Mass.

141. Dry Acid
Fluromine is a dry powdered, fluoride-containing compound used in acid treatment of metals. It is said to be less hazardous than liquid hydrofluoric acid. Can be used in acid pickling of colloidal silicate films, for pickling sand castings, for smut removal, activating and bright etching of aluminum and magnesium alloys, pickling of stainless steels and titanium. Complete details in Data Sheet No. 110, Platers Research Corp., 59 E. 4th St., New York 3, N. Y.

142. Polishing Machine
A four-page folder describes and illustrates the Bader Space Saver, shows how this machine can be used with various types of abrasive belts and contact wheels. Can be used as swing frame or floor mounted. Stephen Bader & Co., Valley Falls, N. Y.

143. Temperature Regulators
Bulletin No. 1000 describes Trerice No. 90000 and 90400 self-operating temperature regulators, which require neither air nor electricity for operation. H. O. Trerice Co., 1427 W. Lafayette Blvd., Detroit 16, Mich.

144. Weather Testing Service
Data sheet describes company's scope of activities, facilities, special services. South Florida Test Service, 4301 N.W. Seventh St., Miami 44, Florida.

145. Strainers
Information on strainers equipped with a duplex pressure gage that indicates when cleanout is required. A. E. Broughton & Co., Glen Falls, N. Y.

146. Water for Plating
Bulletin PK-256 describes units widely used to provide deionized water for plating baths and rinses. Illinois Water Treatment Co., 840 Cedar St., Rockford, Illinois.

147. Cold Stripper
Literature sheet describes Electro Cold Stripper, a solution that can be sprayed, used for dipping, or brushed on to remove organic coatings. Allied Finishing Specialties Co., 2643 W. Grand Ave., Chicago 12, Ill.

148. Aluminum Wheel and Roller Conveyors
Illustrated catalog sheet provides full details on lightweight line of aluminum wheel and roller conveyors. The E. W. Buschman Co., 4516 Clifton Ave., Cincinnati 32, Ohio.

149. Smooth Surface for Aluminum and Steel
Technical Data Sheet No. 81. A three-page usage and instruction sheet on Electro-Gleam 55, a solution that can be used for brightening steels (including stainless steel) and aluminum. Deburrs, removes sharp edges, improves corrosion resistance and adherence of plated coatings, reduces friction. MacDermid, Inc., Waterbury, Conn.

150. Paints
Twenty pages on the company's facilities, services and products. O'Brien Corporation, South Bend 21, Indiana.

Tool and Die Makers Rubberized Abrasive Kit. A kit of rubberized abrasives especially for tool and die makers has been developed by Cratex Manufacturing Co.

The kit is designed to demonstrate the advantages of rubberized abrasives in solving sensitive deburring, smoothing and polishing problems.

The kit contains the 80 wheels and points most useful to tool, die and mold makers and component parts manufacturers. These are equally assorted in four grit textures (coarse-C, medium-M, fine-F, extra fine-XF). In the set there are also four mandrels for a ⅛-inch chuck.

For more information on the Cratex Tool and Die Makers Kit No. 777, and for a free copy of the Cratex catalog, write Cratex Manufacturing Co., Inc., 1600 Rollins Rd., Burlingame, Calif.

Classified Advertising

Space on this page is available for advertising of Services, Employment, Used Machinery & Equipment, Etc. Sold in inch units, one col. wide. Rate: $22 per col.-inch.
PRODUCTS FINISHING, 431 Main St., Cincinnati 2, Ohio

SOUTH FLORIDA TEST SERVICE, INC.
Testing—Inspection—Research—Engineers
Consultants and specialists in corrosion, weathering and sunlight testing.
4301 N. W. 7th St. • Miami 44, Florida

CHEMIST
SITUATION OPEN—Chemist for Plating Laboratory in large finishing Company, Newark, New Jersey. Experience in analysis and control. Reply submitting full resume of experience to Box No. 72, c/o Products Finishing, 431 Main Street, Cincinnati 2, Ohio.

TECHNICAL SALES & SERVICE
Position open in Midwest for man, preferably experienced, in calling on job and captive electroplating plants for one of the world's leading companies. Please write giving full resume of experience, age and marital status. Our fieldmen know of this advertisement. Box No. 73, c/o Products Finishing, 431 Main St., Cincinnati 2, Ohio.

ENGINEER, DESIGN-ESTIMATING
Power Washers, Degreasers, Finishing Equipment. Excellent Opportunity.
RANDALL MFG. CO.
801 Edgewater Rd. • Bronx 59, N. Y.

finishing clinic

Suggested solutions to problems submitted by readers. Send your problem to our Editorial Staff. There is no charge.

Chromium and Copper Plating

Question: *We have tested a hard chromium finish on copper done in the United States. Although it is only 0.002 to 0.003 inch thick, it is very hard and can not be gouged through or crushed. Could you tell us how the chromium plate was so hard on such a soft foundation as copper?*

Also, we have been asked to deposit 0.200 to 0.250 inch of copper on worn rolls five feet long by 6 inches in diameter for the printing trade.

What would be the best equipment to handle such rolls, the approximate weight of copper deposited and the time required to reach the above thickness?

G. L. L.

Answer: For more information on the hard chromium plate, I suggest that you contact the companies listed in the PRODUCTS FINISHING DIRECTORY under the heading, "PLATING PROCESSES and/or CHEMICALS, chromium" on pages 158 through 160.

A chromium plate 0.002 inch thick may be quite hard and difficult to gouge or crush even when deposited over a so-called "soft" metal.

With reference to your question on depositing copper, I am enclosing tear sheets of the article "Plating Rotogravure Printing Rolls" which was published in the August, 1951, issue of PRODUCTS FINISHING.

Plating of copper on rolls requires special equipment not only for handling the rolls, but also for plating them.

Barrel Enameling

Question: *Your article on barrel enameling of large quantities of small metal parts in the April issue of PRODUCTS FINISHING was read with much interest.*

What kind of enamel is best for this purpose?

Who manufactures such enamels?

E. C.

Answer: Actually, many kinds of enamel and lacquer will serve for barrel enameling. The chief quality that the paint must have is that of being "very short" or having little flow.

Manufacturers of enamels are listed on pages 89 through 92 of the PRODUCTS FINISHING DIRECTORY. Manufacturers of lacquers are listed on pages 111 through 116. Manufacturers of other types of paint are listed on pages 135 through 143. These manufacturers can recommend the proper lacquer or enamel for your use.

★ ★ ★

Deburring Magnetic Iron Laminations

Question: *After being punched out by a die, a magnetic iron lamination we make contains burrs on the I.D., O.D. and four mounting holes. These laminations are to be stacked next to, and must be insulated from each other.*

Can you suggest a mass production method of removing the burrs? Also

can you recommend an insulating varnish to cover each lamination? Operation to 350 deg. F. or higher is required. This finish should be on the order of 0.001 inch thick.

The magnetic iron initially is covered with an insulated coating. If the deburring method did not remove this coating, the varnish would not be required.

R. E. P.

Answer: Manufacturers of barrel finishing equipment will be happy to process some of your parts to assist you in developing a barrel finishing technique by which you can remove the burrs. These manufacturers are listed in the PRODUCTS FINISHING DIRECTORY (page 30).

The companies listed under the heading "Paints, heat-resistant" beginning on page 123 can recommend an insulating varnish for your use following the barrel processing.

★ ★ ★

Vinyl Polymer Coatings

Question: *On page 52 of the November, 1958, issue of PRODUCTS FINISHING, there was an article on Vinyl Polymer Coatings. I would like to have some information on this, as we have some trays used for chemicals which we'd like to coat with an acid-resistant coating.*

W. D.

Answer: Vinyl Polymer Coatings were mentioned in Mr. Pollay's article, "A Review of Organic Coatings" published in the November issue of PRODUCTS FINISHING.

For further information on the coatings discussed by Mr. Pollay, we suggest that you write directly to him at The Chemical Coatings Corporation, Rocky Hill, Connecticut.

Additional information on these coatings also may be obtained from the paint manufacturers listed in the PRODUCTS FINISHING DIRECTORY.

Deburring Stainless Steel Springs

Question: *Tightening of Air Force requirements makes it necessary for us to remove all burrs and loose particles from the 8-18 stainless steel springs we make before they are put into use.*

The main points of trouble are sharp edges inside the ground-end coils, and particles under the last coil, which may work loose in hydraulic units. These same requirements exist on carbon steel springs as well.

It is our hope that you can put us in touch with some jobbers or consultants in our area who can help us with this project.

E. E. P.

Answer: The companies listed in the PRODUCTS FINISHING DIRECTORY under the headings "Barrel Finishing Equipment" and "Barrel Finishing Supplies" will be glad to work with you on your problem. Some can recommend processors in your area. Consultants are also listed in the DIRECTORY, and you may wish to contact those who are located near your plant.

★ ★ ★

Buffing Cost Analysis Form. Form shows how to keep records and compute cost figures for buffing operations. By following recommendations outlined, the following cost figures can be determined:

1. Compound cost per unit.
2. Buff cost per unit.
3. Hourly or daily compound and buff usages.

The form also contains information on a method for running product comparison tests.

Copies of this literature may be obtained by writing on company letterhead to Schaffner News Bureau, Schaffner News Center, Pittsburgh 2, Pennsylvania.

News of the Finishing Industry

- company news
- new positions
- new plants
- meetings

NEW PLANTS

NRC Equipment Corporation Opens West Coast Engineering Office

NRC Equipment Corporation, producer of high vacuum equipment, has established a West Coast engineering office at the company's regional sales office, 449 Hamilton St., Palo Alto, California. Edward G. Ferrori will manage the engineering office.

New Deering, Milliken Research Center

The Deering, Milliken Research Corporation recently dedicated a new two-million-dollar research center in Spartanburg, S. C.

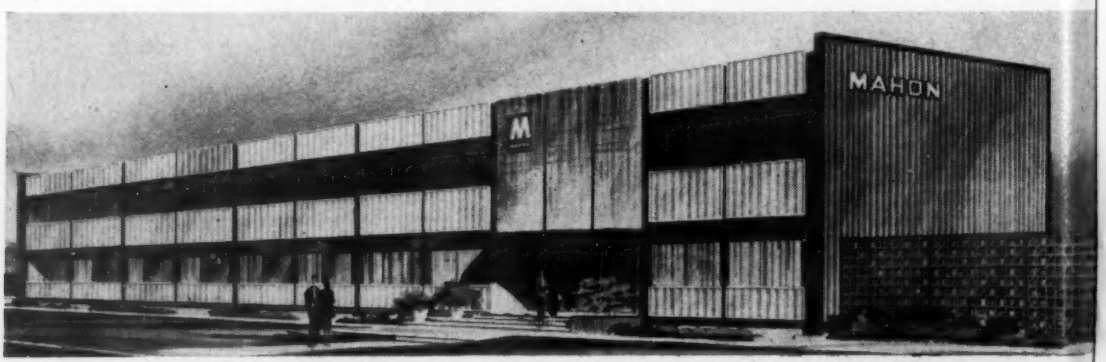
Formed to serve a number of different mills, with Milliken as the selling agent, the research corporation built what is said to be the world's largest industrial textile research center. The new facilities include nine chemical laboratories, an electrical laboratory, physical laboratory, library, experimental machine shop, and pilot plant.

DuBois Opens Dallas Plant

The DuBois Co., Inc., has opened a Southwest plant and sales office at 8770 South Central Expressway, Dallas, Texas.

The building contains over 35,000 square feet of manufacturing space and houses regional offices and laboratory. The laboratory will handle qual-

★ ★ ★



Artist's conception of the modernistic, 10,000-square-foot, two-story Western Division administration and engineering building The R. C. Mahon Co. of Detroit has under construction in Torrance, Calif., as part of a $3.5 million West coast expansion program. The stainless-steel-faced unit will be entirely separated from the 200,000-square-foot manufacturing plant, also being built on the 30-acre site, 12 miles south of Los Angeles.

DuBois Dallas plant and sales office.

ity control in the plant and special customer problems.

DuBois manufactures and distributes chemical cleaning compounds for the metal working and many other industries.

Construction of Diamond Alkali Research Center Begins

Diamond Alkali Company has awarded the general contract for construction of a new multimillion dollar Research Center to be located near Painesville, Ohio. (See PRODUCTS FINISHING, November, 1958, page 140). It is anticipated that construction will be completed in late 1960. When complete, the new Research Center will accommodate Diamond's Research Department.

The multiple-building facility will include a principal building to house laboratory and office facilities, as well as the Research Department Library, reception lobby and other necessary adjuncts to a research laboratory.

A second building will have additional laboratories and offices, with the west portion accommodating pilot plant experimental equipment.

Included in the project are auxiliary buildings of which the most notable is a high pressure laboratory containing four work cells as well as offices and supporting facilities.

Plastics Fabricator Opens New Plant

Reynolds Plastic Co., Inc., is establishing a plant in Tipton, Indiana to manufacture reinforced plastic pallets, trays, and other plastic products. M. Les Reynolds, president, has announced that the decision to start production was made after intensive testing of the products in several industrial fields.

COMPANIES

Ti-Co Elects Officers

Stockholders and directors of Ti-Co Industries, Inc., Tipton, Indiana, producer of industrial abrasive cob products for soft grit blasting and tumbling in metals and plastics finishing, have re-elected H. P. Crouch president and A. K. Kinder vice president.

Directors re-elected were: L. O. Williams, president of B-W Manufacturers, Inc., Dorris A. Crouch, Mark Ertel, general manager of the Tipton Perfect Circle Corporation plant, Mr. Crouch and Mr. Kinder.

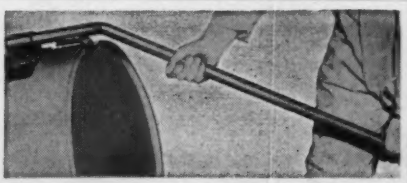
Croname to Produce Aluminum "Spangle Sheet"

Croname, Incorporated, Chicago decorative metal manufacturer, has completed a licensing agreement with the Aluminum Company of America, Pittsburgh, to make Alcoa-developed "Spangle Sheet," according to John C. Anderson, Croname vice president in charge of product development.

MORSE DRUM UPENDER No. 32

Takes the strain and effort out of upending heavy drums. Has 40" handle offset 35° for top efficiency. Hefty 1¼" hook provides clearance for largest chime. 2½" x 8" toe plate spreads lifting pressure over large area to prevent drum damage. Order Several Today!

MORSE MFG. CO., INC. 761 West Manlius St., E. Syracuse, N.Y. **$6.90** FOB



For more data circle 388 on Postpaid Card

Spangle Sheet is an aluminum alloy which is given an exaggerated and visible grain structure by a specially controlled mill process and a licensed finishing process which develops the grain structure into millions of tiny satin and bright facets. The material can be anodized and dyed gold as well as other colors.

Du Pont Increases Capacity for Producing Sodium, Chlorine

New facilities for producing sodium and chlorine at Du Pont's Memphis, Tenn., plant result in a 50 per cent increase in production capacity for these chemicals.

The additional sodium will be used in metal-descaling chemicals, high-energy fuels and other products.

Part of the additional chlorine will be used to manufacture chloride-type titanium dioxide pigment. Chlorine is also used by Du Pont in making chlorinated solvents for many other purposes.

Plating Progress Begins Second Year

Plating Progress, a bi-monthly technical service report published by Sel-Rex Corporation, is now entering its second year. This publication brings illustrations and up-to-date technical data to over 20,000 persons and companies responsible for precious metals plating of such articles as jewelry, electrical components, and satellites.

Plating Progress: ***enters its second year***

A built-in reply card offers readers data and prices on electroplating supplies and equipment. Replies come in to the Nutley, N. J., firm from readers in job plating shops, huge aircraft facilities, electrical and electronic industries, and (serviced by a special edition of *Plating Progress*) jewelers.

Kocour Appoints Canadian Service Agency

Kocour Company recently appointed the Canadian Research Institute, 46 George St., Toronto, Canada, as authorized service agency for the Kocour electronic thickness tester. This will make it possible for Canadian owners to get service more easily and more quickly, the company reports.

Directors of Chempump and Fostoria Pressed Steel Approve Merger Plan

Directors of The Fostoria Pressed Steel Corporation, Fostoria, Ohio, and of Chempump Corporation and Zenith Engineering Corporation, Philadelphia, have approved a proposal to merge the three concerns. The combined company would be known as Fos-

"GRIPALLOY"

. . . Attractive satin sheen ETCHING PRIMER in black and colors . . . Often used as finish coat . . . Air dries in minutes . . .
. . . Amazing tight adhesion to 25 different metals as reported by a large electrical manufacturer.
. . . Excellent resistance to Salt Spray, Gasoline, and Solvents . . .

TENAX, Newark, N. J.
Lacquers—Enamels
Synthetics—Vinyls

For more data circle 389 on Postpaid Card

toria Corporation and would continue intact the activities of the present companies.

Fostoria manufactures industrial lighting units, electrical infrared ovens and seal-less pumps. Chempump manufactures seal-less pumping equipment for the chemical, nuclear, petroleum, refrigeration and pharmaceutical industries. Zenith, an affiliate of Chempump, is an engineering development and patent-holding company.

Turco Expands Chem-Mill Division

Turco Products, Inc., recently expanded its Chem-Mill Division to assume full responsibility for marketing a line of specialized coatings. The new line of coatings will be marketed, along with the regular Chem-Mill coatings, to aircraft, missile and associated industries, as well as to industries not associated with the military.

As a part of this reorganization, the company made the following changes of personnel assignment:

John F. Crowther, formerly general manager of the Chem-Mill Division, has been elected vice president of manufacturing for Turco Products, Inc.; George H. Fox, Jr., formerly sales manager of the Chem-Mill Division, has become division manager of the new Chem-Mill and Coatings Division; Stanley F. Gruen, formerly administrative assistant to the sales manager, Chem-Mill Division, has become staff assistant to the division manager, Chem-Mill and Coatings Division; Hugh H. Muller, formerly technical assistant to the sales manager, Chem-Mill Division, has become supervisor of the Chem-Mill and Coatings Division's Technical Service Group; James D. Barton has assumed all sales and service responsibilities in the western region of the United States for the new division and C. Lee Hammond has assumed all sales and service responsibilities in the southwestern and southern regions of the United States.

National Research Corporation Licenses Steel Company for Vacuum Aluminum Coating Process

National Research Corporation recently licensed National Steel Corporation to use NRC's developmental process for vacuum coating aluminum on steel sheet. The steel coated by this method is for use in making cans and similar products. The license agreement is on a non-exclusive basis.

National Research Corporation officials report that considerable additional development work will be required before the process can be used on a commercial scale.

New Agents Appointed by Techline

Four new agents have been appointed by the Techline Division, Wheelabrator Corporation, Vicksburg, Michi-

For Platers, Silversmiths, Jewelry Mfgrs., Makers of Watches, Clocks and Electronics and other metal finishers.

Supplied in straight or crimped brass, steel, nickel silver or stainless steel wire in sizes .0025 to .006 and in bristle, fibre or Nylon. Special sizes and shapes to order.

Write (Dep't. P) on your letterhead for catalog and price list.

DIXON & RIPPEL, INC. Box 116 Saugerties, N. Y.
ESTABLISHED 1856

For more data circle 390 on Postpaid Card

DuBois sales representatives from Illinois, Missouri, Iowa, Nebraska, Wisconsin and Minnesota attended a two-day sales seminar recently at the Bismarck Hotel, Chicago. Current applications and new problems that arise in institutional and industrial cleaning and maintenance were discussed.

gan, manufacturer of barrel finishing and wet blasting equipment and supplies.

Lester R. Albert, Jr., owner of Carol Machine Tool Company of Ramsey, N. J., will represent Techline in the metropolitan New York area and in northern New Jersey.

The Bauer Company of Fort Worth, Texas, has been appointed Techline agent for the state of Texas.

Gene A. Castle will represent Techline in the northern Indiana and northwest Ohio area.

INDUSTRIAL ABRASIVE COB PRODUCTS

- **COB GRITS (Blasting)**
- **COB FLOUR (Foundry)**
- **COB MEAL (Tumbling)**

For Plastics and Metals Finishing

TI-CO INDUSTRIES, INC.

P. O. BOX 185 • TIPTON, INDIANA

Phone or Telegraph: FEderal 2-5942, Elwood, Indiana

For more data circle 391 on Postpaid Card

Robert H. Tiers, president of Torrington Chemical & Supply Company, Torrington, Conn., has been appointed to represent Techline Division in the states of Maine, New Hampshire, Vermont, Massachusetts, Connecticut, and Rhode Island.

New Distributor

Fuller-Reynolds Chemicals, Inc., Tipton, Indiana, has been formed to distribute industrial chemicals in central Indiana. Officers of the corporation are Ira K. Fuller, president; M. Les Reynolds, vice president and treasurer; Robert A. Stewart, secretary. Mr. Reynolds will also serve as director of sales. Stocks will be available in Indianapolis and Tipton, Indiana.

New Distributor for Pioneer Industrial Products

Conney Products Company, Inc. of Fond du Lac, Wisconsin, has been appointed distributor for the industrial gloves manufactured by the Pioneer Rubber Company of Willard, Ohio.

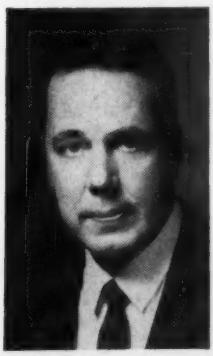
Conney Products Company, with headquarters at 174 West Division St., in Fond du Lac, will distribute Pioneer's Stanzoil, Stanflex, Pacemaker, Sheergrip and Nimble Fingers industrial gloves throughout the four-state area that includes Wisconsin, Minnesota, Illinois and Indiana.

Exposure Test Service

A new company called Solar Testing Service recently opened a test site at Broward International Airport, Ft. Lauderdale, Florida.

The new test service will specialize in testing paints, plastics and textiles in the sub-tropic environment of the area, using facilities for exposing samples sent in by manufacturers at 45 degrees south or horizontal, or vertical north or south. Tests can be made fully exposed, under glass, or under cover.

Schaffner Issues Tennessee Franchise



Charles D. McCarty

Schaffner Manufacturing Co., Inc., has issued a franchise to Charles D. McCarty for the distribution in the state of Tennessee of products manufactured by Schaffner.

Mr. McCarty's headquarters are at 4105 Central Avenue Pike, Knoxville, Tenn.

Gumm Appoints Florida Distributor

Frederick Gumm Chemical Company, Kearny, N. J., has appointed Allied Plating Supplies as distributor in Florida. Allied will stock Clepo metal cleaning, aluminum processing, burnishing, deburring, and specialty compounds for the metal finishing industry in its warehouse at 5000 E. 10th St., Hialeah, Florida.

Frank X. Marinello is president of Allied Plating Supplies, Abe Schorr, distribution manager, and Earl Kennedy is sales manager.

Bellevue Plating Installs Big Automatic

A high-speed 30-barrel Udylite automatic plating machine recently installed by Detroit's Bellevue Plating Company boosts the job plater's capacity to 100,000 pounds per shift, makes it possible for the Detroit company to offer same-day service, with material arriving in the morning shipped out in the same containers before the day ends.

The big automatic, which will be used primarily for cadmium plating, joins the company's 24-barrel automatic zinc plater to provide for the stepped-up delivery schedule.

The cadmium machine has facilities

TITANIUM

FOR

ANODIZING RACKS

•

BAR & STRIP

•

NUTS & BOLTS

•

STANDARD RACKS & CLIPS

•

CATALOG

•

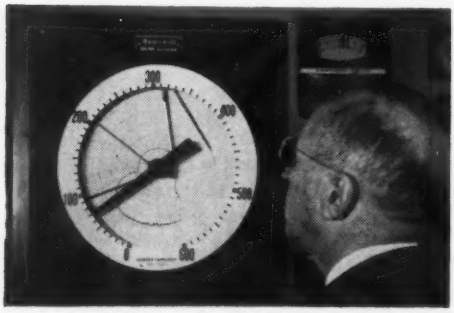
DETROIT INDUSTRIAL PROCESS COMPANY

9301 FRENCH RD. • DETROIT 13, MICH.

WAlnut 1-3800

For more data circle 392 on Postpaid Card

The cycle to be undergone by any barrel at Bellevue Plating is selected by the machine operator at the time of the loading.



Conveyorized hydrogen relief oven with recording temperature control makes possible plating to a predetermined thickness and hydrogen relieving immediately after plating.

for chromate coating and includes a fully conveyorized hydrogen-relief oven that makes it possible to stress relieve immediately after plating.

Armour Men Advise Auto Industry

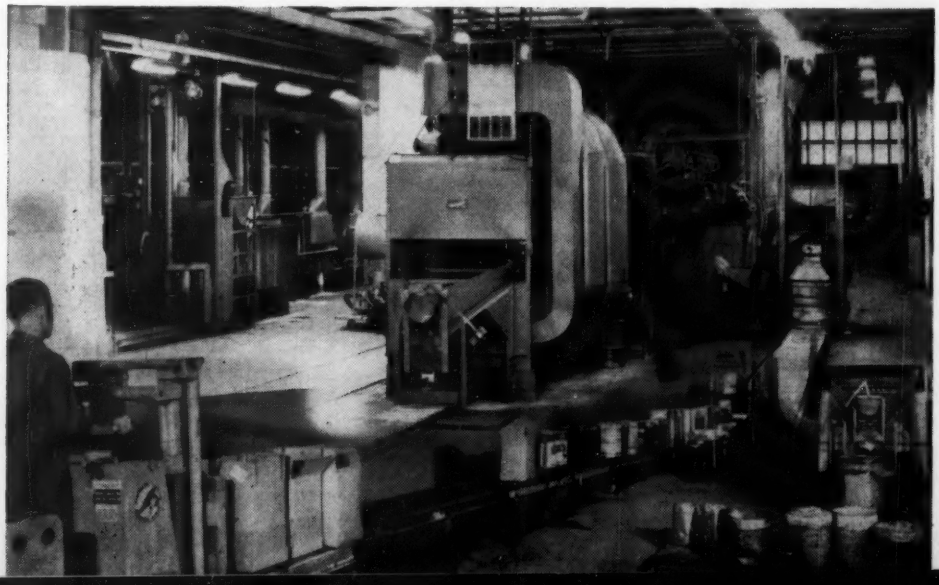
A group of abrasive specialists recently formed by the Coated Abrasives Division of Armour and Company has been traveling through automotive manufacturing plants making recommendations for improving finishing operations.

The group has already proved its value, the company says, by making several cost-cutting and quality-improving suggestions to various manufacturers.

- A change in finishing paper cut primer sanding time by 85 per cent in one plant.
- Coated abrasive lapped bands improved grinding of body solder in another plant.
- Replacing set-up wheels with cloth belts doubled production for one finisher.

Head of the new group is John Trecha, graduate of General Motors Institute of Technology.

The conveyor brings work directly from the receiving room to the plating line.



Graver Releases Nomographs on Recovery of Waste Water and Chemicals

Two nomographs—one on the value of recovered water and the other on the amount of waste chemical which can be recovered—have been released by Graver Water Conditioning Co., 216 W. 14th St., New York 11, N. Y.

To use the nomograph on recovered water, one must know the cost of makeup water and the average flow through the plant. The recovered water value is obtained by drawing a straight line on the nomograph. As an example, if makeup water costs 12.5 cents/M gals., and plant flow is 500,000 gals./day, a straight edge will reveal that the value of recovered water is about $60.00/day.

To use the nomograph on recovered chemical, it is necessary to know the amount of recoverable chemical in p.p.m. and the volume of waste water in gals./day. For example, 50 p.p.m. of recoverable chemical and a water volume of 200,000 gals./day means that about 85 lbs./day of chemical can be recovered. This can be translated into dollars-and-cents by applying the market value of the particular chemical being recovered.

New Publication About Ultrasonics

Ultrasoundings, a quarterly illustrated review of ultrasonic progress, is now being published by Acoustica Associates, Inc., Plainview, N. Y., and Los Angeles, Calif. manufacturer of ultrasonic systems.

The first issue includes several articles describing ultrasonic cleaning applications in industry and informs users how to get the most from this industrial processing technique.

In addition, the publication includes brief descriptions of recent developments by Acoustica: the Multipower transducer for improved results in all applications requiring cavitation; Sefar, a lightweight, low-frequency echo-ranging device for underwater sound applications; the Acoustica Ultrasonic Continuous-Level Gage for all types of liquid-level monitoring and control; ultrasonic liquid-level switches for cryogenic and corrosive liquids.

The publication will be sent without charge to persons requesting a copy from Acoustica Associates, Inc., Dept. P, Fairchild Ct., Plainview, N. Y.

Riverside Plastics Acquires Manufacturer of Peelable Plastic Coatings

Riverside Plastics Corporation, Hicksville, N. Y., has purchased the Bischoff Chemical Corporation, owned by Miles Laboratories.

Bischoff manufactures Thermo-Cote protective strippable plastic coatings, which are used for protecting metal cutting tools and metal parts during shipment and storage and as a stop-off in plating. Riverside will continue to produce and market the Bischoff coatings.

QUALITY EQUIPMENT

PRICED RIGHT AND READY FOR IMMEDIATE SHIPMENT

BUFFING AND POLISHING EQUIPMENT

Hammond — Divine — U. S. Electric — Holland — Standard Electric — L'Hommedieu single speed and variable speed buffing and polishing machines. 1 to 20 HP.

Rotary Machines: Hammond — Acme — Packermatic.

Complete buffing systems for above machines, including hoods, cyclones, dust boxes, pipes, motors and blowers; various sizes.

Semi-automatic machines: Buffalo—Hammond Acme—Divine—Production.

ALL EQUIPMENT IN STOCK
INSPECTION INVITED

all quoted subject to prior sale.

J. HOLLAND & SONS, INC.

487 KEAP ST., B'KLYN, N. Y., STagg 2-2022

For more data circle 393 on Postpaid Card

Vanton Pump Creates Design Service Department

A Design Service Department to help small pump users solve fluid-handling and pump problems has been announced by Gerald Lewis, sales manager for the Vanton Pump Division of Cooper Alloy Corporation, Hillside, N. J.

Prime function of the new department will be to give detailed advice on specific fluid-transfer problems. According to Mr. Lewis the department was developed out of a growing need for detailed technical advice tailored to specific problems.

Fluid handling system designers can obtain additional information on the new design service by writing on company letterhead to Vanton Pump Div., Cooper Alloy Corp., Hillside, N. J., Attention: Design Service Department.

Cold Bonderite Wins GE Award

Parker Rust Proof's Cold Bonderite recently won the G.E. Home Laundry Department's "Supplier of the Month Award" at the Appliance Park plant, Louisville, Ky.

Cold Bonderite, which is a phosphate coating solution that can be used at lower temperatures, was introduced by Parker in 1957, has since been accepted in more than 100 plants.

The GE citation, which was accepted by R. W. Englehart, president of Parker, says that use of the new product has resulted in "considerable savings per year in steam costs and has lowered the ambient temperature of the paint enclosure . . ."

R. W. Englehart, president of Parker Rust Proof Co. (right) accepts citation as "Supplier of the Month" from R. J. Keyser, manager of manufacturing of the Home Laundry Department, General Electric Company.

Amchem Holds European Convention

Amchem Products, Inc. of Ambler, Pa. has just completed a five-day European Convention held at the Imperial Hotel, Copenhagen, Denmark May 31 through June 4. Over 100 foreign licensees and their wives were in attendance representing Austria, Belgium, Denmark, England, Finland, France, Germany, Greece, Holland, India, Israel, Italy, Norway, South Africa, Spain, Sweden and Switzerland.

The following company representatives covered for the three Amchem Divisions — Metalworking Chemicals, Agricultural Chemicals and Benjamin Foster Products: Leon Cherksey, chairman of the board, John O. J.

Telephone collect for free brochure on
STRIPPING COPPER
with
McKeon's "Liquid Sulphur"
Economical, fast, non-electrolytic
Sulphur Products Co., Inc.
McKeon Bldg., 621 W. Pittsburgh St., Greensburg, Pa.
For more data circle 394 on Postpaid Card

Shellenberger, J. I. Simpson, J. H. Geyer, J. R. Sterry and S. E. Sasse.

Acme Holds Open House During A.E.S. Convention

Acme Manufacturing Co., Detroit manufacturer of polishing and buffing machines, held open house during the recent American Electroplaters' Society Convention and Industrial Finishing Exposition.

The open house was at the company's plant, 1400 E. Nine Mile Rd., Detroit. It was part of Acme's 50th anniversary celebration.

A large number of machines were in operation for inspection by the many people who visited the plant. Polishing equipment in the display included adjustable lathes, semi-automatic lathes, rotary automatics, straight-line automatics, special machines and flat-stock polishing and grinding machines.

The open house was preceded by a press conference held on Monday, June 15 and attended by representatives of the business press. At that time Glen A. Carlson, Sr., president, George R. Carlson, vice president, and Glen A. Carlson, Jr., assistant to the president, discussed the company's founding, development and present position. The press representatives were then taken on a tour of the display area and the operation and function of the various polishing and buffing machines were described in detail.

DeVilbiss Display Compares Coating Methods

A graphic presentation of the effectiveness of the hot spray method of coating surfaces for protection against corrosion (in maintenance applications) has been developed by The DeVilbiss Co.

Plastic panels with simulated typi-

Some of the many machines displayed by Acme Manufacturing Co. during the company's recent 50th anniversary open house. (Photo courtesy Acme Manufacturing Co., Detroit, Mich.)

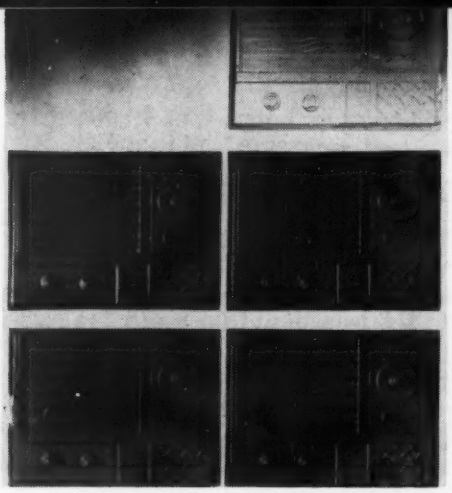


Fig. 1—You can't always tell by the cover. Panels like the clear plastic one at top have been covered with a chlorinated rubber coating by four different methods used in maintenance painting. The panel simulates different surfaces which need to be covered to protect against corrosion and, in this photo, all four panels appear to be equally well coated.

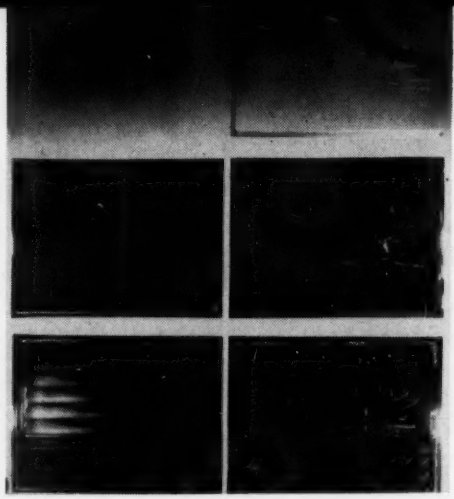


Fig. 2—The addition of strong back-lighting tells the real story of the cover. The panel at upper left has been coated by the hot spray method, the panel below it, by the cold spray method. Below the clear panel at right is the brush-coated panel, while the roller-coated panel is at bottom right. A graphic display of the importance of coating methods in maintenance painting.

cal surfaces to be protected against corrosion—non-skid flooring, corrugated siding, protruding nuts, bolts and studs—are covered with the same coating material, but applied by different methods. On one panel the material is brushed on, another has been coated by roller, a third by cold spray and a fourth by hot spray.

When the panels are backlighted, the efficiency of coverage by each method is clearly shown.

The brushed panel clearly shows the inadequacy of coverage, particularly around protrusions. There is much uncoated area which is subject to attack by rust and corrosion.

Roller coating shows similar inadequacies.

Cold spray is shown to be more efficient than either the brush or roller method, but still inferior to hot spray which, by delivering the coating material at uniform temperature and viscosity, gives the most complete and thorough coverage.

Designed by Homer Lange, advertising manager of DeVilbiss, and incorporated into a display at the convention of the American Society of Corrosion Engineers and at the Painting and Decorating Contractors Show, the panels proved effective attention-getters. In fact, a number of companies have requested copies of the panels for use internally in demonstrating the effectiveness of various coating methods to their maintenance staffs.

SOLVENTS and THINNERS RECOVERED

from wash thinners, spoiled lacquers, degreasing machine sludge, etc.

Solvents recovered by the Lofgren Process. Each customer's shipment, whether one drum or a carload, receives proper and separate treatment. *Write to:*

Solvents Recovery Service, Inc.
1025 Broad St. Newark 2, New Jersey
Hammond Solvents Recovery Service
241 Brunswick Rd. Hammond, Ind.

For more data circle 395 on Postpaid Card

L. R. Kerns Celebrates 25th

L. R. Kerns Company, Chicago manufacturer of products for grinding, phosphatizing, drawing, forming and cutting, celebrates its 25th anniversary in August of this year, according to B. L. Smalley, president.

Kerns was founded in a building near its present Chicago home, now has offices in principal cities throughout the United States, plus a plant in Orange, California.

Commercial Filters Appoints Michigan Representative

Jesse W. Eakins Corporation, 15785 James Couzens Highway, Detroit, has been appointed to represent Commercial Filters Corporation in Michigan.

Stripping Process Saves Time for IBM

International Business Machines saves time in producing electric typewriters in its Lexington, Kentucky Plant by using Ni-Plex, a Hanson-Van Winkle-Munning Company stripping bath that makes it possible to strip assembled parts.

Ni-Plex is a one-bath non-electrified solution. Parts are collected in a steel basket and immersed in the solution for one hour or less. They emerge completely stripped of nickel.

Most parts to be stripped are nickel and copper plated steel; some are silver soldered or copper brazed. The stripper does not attack copper, silver or brazed joints and seams.

After parts are stripped they are cold water rinsed, hydrochloric acid dipped, cold water rinsed, dipped in water-soluble oil and dried.

Sel-Rex Exhibit Tours India

One of the most popular exhibits in the U. S. Small Industries Exhibit currently touring India consists of a selenium rectifier, plating tanks, and bright gold solution, all products of Sel-Rex Corporation, Nutley, N. J. Installed and manned by Indian technicians, the equipment has been used to plate thousands of souvenirs and sample strips since the exhibit began touring India in December, 1958.

Krishnam Moorthy Rai (Deputy Chairman Council of State) watches a demonstration of Sel-Rex bright gold during U. S. Small Industries Exhibit's tour of India. (Photos courtesy Sel-Rex Corporation, Nutley, N. J.)

Indian technician replenishes Sel-Rex bright gold solution just prior to the time for visitors to begin entering the U. S. Industries exhibit during its stopover in New Delhi, India.

Acoustica Associates Acquires Universal Dynamics

Acoustica Associates, Inc. has acquired Universal Dynamics Corporation, Santa Barbara, California, manufacturer of piezoelectric ceramics used in ultrasonic and sonar equipment. The acquisition was announced by Robert L. Rod, president of Acoustica.

Universal Dynamics Corporation will operate as a wholly owned subsidiary of Acoustica. Harry W. Kompanek, who formed Universal a year ago, will continue as president of the subsidiary.

Universal Dynamics Corporation has just moved into a new plant in Santa Barbara.

NEW POSITIONS

Frederic B. Stevens, Inc., appointed **L. Russell Munch** sales engineer for the State of Ohio.

★ ★ ★

Edwin F. Goad promoted to marketing supervisor for coated abrasives and new products, coated abrasives and related products division, by **Minnesota Mining & Manufacturing Co.**

★ ★ ★

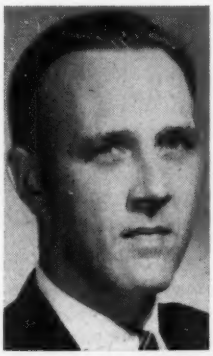
Raymond W. Carnehl appointed representative for the J. B. Ford Division's industrial products line in **Wyandotte Chemicals'** Kansas City District...

11TH ANNIVERSARY

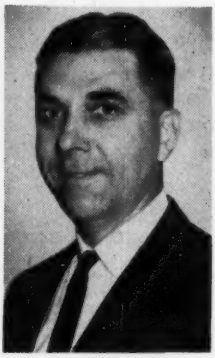
The experience of platers, foremen, chemists and executives for the past eleven years with ELECTROPLATING KNOW HOW, the unique home study course, has proved its value to them. Why not prove its value to YOU? Write DR. JOSEPH B. KUSHNER, ELECTROPLATING SCHOOL, BOX 2066, EVANSVILLE 14P, INDIANA, for free details **today!**

For more data circle 396 on Postpaid Card

Hanson-Van Winkle-Munning Company appointed **David M. Roney, Jr.** sales manager of its Equipment Division and **Willard J. Harper** chief engineer...



David M. Roney, Jr.



L. Russell Munch

George Russell

Raymond W. Carnehl

George Russell has been promoted from assistant to chief engineer by **Amchem Products, Inc.**, Ambler, Pennsylvania . . .

★ ★ ★

Diamond Alkali's Chromium Chemicals Division promoted several men to key positions following the death of **Walter W. Cooke**, general manager of the company's Chromium Chemicals

Division plant in Panesville, Ohio. **A. W.Waller** becomes operations manager of the division at both Kearny and Painesville; **George Henderson** becomes general superintendent at Kearny; **George Barbieri** becomes general superintendent of the division's plant at Painesville; **Matthew A. Killinen** will be assistant general superintendent at Painesville.

★ ★ ★

Dr. Edward S. Wheeler joined **Amchem Products, Inc.**, Ambler, Pa.

E. W. Vereeke

Dr. Ed. S. Wheeler

Edwin W. Vereeke, formerly executive vice president, has been elected president of **Heil Process Equipment Corp.,** Cleveland manufacturer of corrosion resistant ventilating equipment, tanks and tank linings, succeeding **Carl E. Heil,** founder and former president, who was elected chairman of the Board of Directors.

Mr. Vereeke is a member of the Cleveland Athletic Club, Cleveland Engineering Society, Sales Executive Club, and a charter member and past president of the Cleveland chapter of the National Association of Corrosion Engineers. . .

★ ★ ★

C. C. Helmle has been appointed vice-president and general manager of **Enthone, Inc.,** New Haven, Conn., a subsidiary of American Smelting and Refining Company. In 1943 Mr. Helmle was named a vice-president of Enthone and has played an active role in the rapid growth of the firm. He has published many articles on the engineering aspects of metal finishing. He is a past president of the Bridgeport Branch of the A. E. S. and a past national officer. He is a member of the Board of Trustees of the Metal Finishing Suppliers' Association and chairman of the Trade Promotion Committee. . .

Dr. E. B. Saubestre

C. C. Helmle

William K. Murray

Dr. Edward B. Saubestre has been promoted to technical director and **William K. Murray** advanced to manager of marketing. . .

★ ★ ★

Pittsburgh Plate Glass Company's paint division announced several appointments in its research and development department. **Richard T. Ubben** will be the new division technical director, succeeding **Dr. W. W. Bauer,** who is working on a technical assignment overseas for **Pittsburgh Plate Glass International. Robert P. Ericson** has been appointed assistant division

technical director. **R. E. Mutzberg** has been named technical director of the firm's East Point plant.

★ ★ ★

T. D. Skaggs

J. G. Galloway

Charles E. Bagwell

Peter Arnold

Herbert E. Hirschland

A. T. Nielsen

Commercial Filters Corporation named **John Kerber** manager of the company's New York office and **Herbert A. Wilson** eastern district manager.

★ ★ ★

Ceilcote Company appointed **John G. Galloway** eastern sales manager and **T. D. Skaggs** southeastern sales manager...

★ ★ ★

Dr. Louis Schiffman has joined **Amchem Products, Inc.**, will be assigned to Metalworking Chemicals Division.

★ ★ ★

William B. Calhoun, Jr., appointed manager of automotive sales for **Pittsburgh Plate Glass Company's Ditzler Color Division** in Detroit, Mich.

★ ★ ★

Charles E. Bagwell elected to board of directors, **Hanson-Van Winkle-Munning Co.**, Matawan, N. J. **Peter Arnold** promoted to H-VW-M's sales engineering staff.

★ ★ ★

Carl I. Gochenour appointed general manager, product development, **Hooker Chemical Corporation...**

★ ★ ★

National Ultrasonic Corporation appointed **Gilbert Tint** vice president and chief engineer.

★ ★ ★

Herbert E. Hirschland elected vice president in charge of commercial development, **Metal & Thermit Corporation.**

★ ★ ★

A. T. Nielsen appointed plant manager of **Cowles Chemical Company's** operations at Skaneateles Falls, N. Y.

George W. Hottel, field salesman in **Diamond Alkali Company's** New York Branch Sales Office, promoted to staff assistant in the company's General Sales and Market Planning Department, Cleveland...

Transferring to the post vacated by Mr. Hottel is **Jack G. Redmond,** field salesman at Diamond's Cincinnati Branch Sales Office...

★ ★ ★

Oscar A. Stocker appointed sales engineer for **Sel-Rex Corporation** in New England States.

★ ★ ★

Robert L. Rice has joined **Lancy Laboratories,** consultants, as vice president in charge of the Philadelphia office.

★ ★ ★

Industrial Filter & Pump Manufacturing Company appointed **Ted Sward** assistant sales manager, **L. R. Danek** regional sales manager for the eastern area and advertising manager for the company.

★ ★ ★

Allied Chemical Corporation's Solvay Process Division announced a number of top organizational changes. **Wilbur H. Brumfield** has been appointed executive vice president; **Raymond Largent,** vice president; **Bennett D. Buckles,** assistant to the president; **Dr. Robert H. Reed,** assistant director of development; **A. Gregg Noble,** director of purchases; **Dr. Herbert C. Wohlers,** director of research; **Raymond C. Baxter,** assistant director of operations; **Richard A. Hiserodt,** chief engineer; **Robert K. Croll,** assistant chief engineer; **Dr. Alan G. Follows,** assistant director of research.

★ ★ ★

Wyandotte Chemicals Corporation appointed **Duane L. Ball** Industrial Department representative in the Cleveland district.

★ ★ ★

Robert L. Bintzler appointed staff engineer for the **DuBois Co., Inc.**

Metal & Thermit Corporation appointed **Dr. R. M. Kary** to its research staff.

Oscar A. Stocker

Robert L. Rice

Ted Sward

L. R. Danek

Duane L. Ball

Robert L. Bintzler

The board of directors of **R. C. Mahon Co.** elected **Walter G. Mitchell** executive vice president of the company's newly formed Western Division, Torrance, Calif. **D. L. Buttrey** appointed vice president of manufacturing, and **Walter E. Willard,** vice president in charge of the Structural Steel Division.

★ ★ ★

Binks Manufacturing Company appointed **William Krusen** sales representative for the Kansas City territory; **Thomas Frederick** and **Harry Boult** to the Dallas branch; **Henry Glass** to the Philadelphia branch; and **Robert Muessig** to cover the New Jersey area from the New York office.

★ ★ ★

Joseph E. Rhoads appointed assistant to the general manager of **Enthone, Inc., subsidiary of American**

A. Robert Tefft

Joseph E. Rhoads

Smelting & Refining Co. A. Robert Tefft promoted to resident engineer in Cleveland to succeed Mr. Rhoads.

★ ★ ★

The board of directors of **American Smelting and Refining Company** elected **Robert D. Bradford** and **Edward M. Tittmann** executive vice presidents and **Charles F. Barber** and **Forrest G. Hamrick** vice presidents. Mr. Barber was elected a director of Asarco.

T. C. Tiearney appointed assistant sales manager, **Indiana Commercial Filters Corporation.**

SOCIETIES

Robert Giesel Re-Appointed Electroplating Industry Finance Chairman for the United States Committee for the United Nations

Robert L. Giesel, president of Adolph Plating, Inc., Chicago, Illinois, has been re-appointed finance chairman of the Electroplating Industry Division of the United States Committee for the United Nations.

Robert L. Giesel

The United States Committee for the United Nations, now in its eleventh year of activity, is a privately supported citizens organization whose chairman is appointed annually by the president of the United States. Working through 120 voluntary national organizations, the purpose of the committee is to "arouse interest in and disseminate facts about the United Nations and to promote the observance of United Nations Day in the United States."

HONORS

Walter F. Sheetz, Dr. D. A. Keys Honored

An international brotherhood flavor colored the recent commencement exercises of Lawrence Institute of Technology.

Two prominent American and Canadian citizens side-by-side received the highest honorary degrees that possibly

can be bestowed by the institute — Doctor of Humanities—at Ford Auditorium in Detroit's Civic Center.

They were Walter F. Sheetz, president and treasurer of The R. C. Mahon Co., Detroit, and Dr. David A. Keys, head of the Atomic Energy Commission of Canada.

Mr. Sheetz was cited for strong "practical and visionary" industrial leadership, and spending "time and energy far beyond the call of duty toward advancement of civic and educational enterprise—and betterment of his fellow man."

Long active in local civic and community affairs, Mr. Sheetz' association with Mahon, an internationally known firm, dates from its inception in 1912. He started as a salesman, held several executive positions before being elected president in 1955.

Dr. Keys, whose citation was based on scientific leadership, played a major role in Canada's Chalk River power reactor development, which produces Cobalt 60 and other radioactive isotopes for industry and research and in medical use.

TRAINING COURSES

Free Course in Electroplating

The course of study in electroplating given at the Fort Greene Evening High School, 29 Fort Greene Place, Brooklyn, N. Y. (formerly Brooklyn Evening Technical High School) will begin its Fall term on September 16, 1959.

The session is divided into classroom discussion and laboratory experiments. The classroom topics will include simple calculation, reading graphs, chemistry of the plating tank, pH, wetting agents, pitting, deionizing. The laboratory experiments will include solution analysis, Hull cell studies, anodizing.

Registration begins September 14, 1959, and daily thereafter from 7:00 to 8:30 P.M. Classes will meet on Monday and Wednesday from 6:45 to 8:15 P.M. including about 6 Fridays. The term begins September 16 and ends January 31, 1960. Register with L. Serota in Rooms BW17 or 3E12.

AGATEEN

Lacquer No. 10

- Can be dipped or sprayed.
- Air-dries very hard.
- Can be buffed.

A LEADING TOP COAT FOR TOP QUALITY!

Agate Lacquer Mfg. Co., Inc.
Serving Industry Since 1927
11-13 43rd Road
Long Island City, N. Y.
Stillwell 4-0660-1

AGATEEN
THE LAST WORD IN QUALITY

For more data circle 397 on Postpaid Card

NECROLOGY

Walter W. Cooke

Walter W. Cooke, general superintendent of Diamond Alkali Company's Chromium Chemicals Division, died in an automobile accident on June 12.

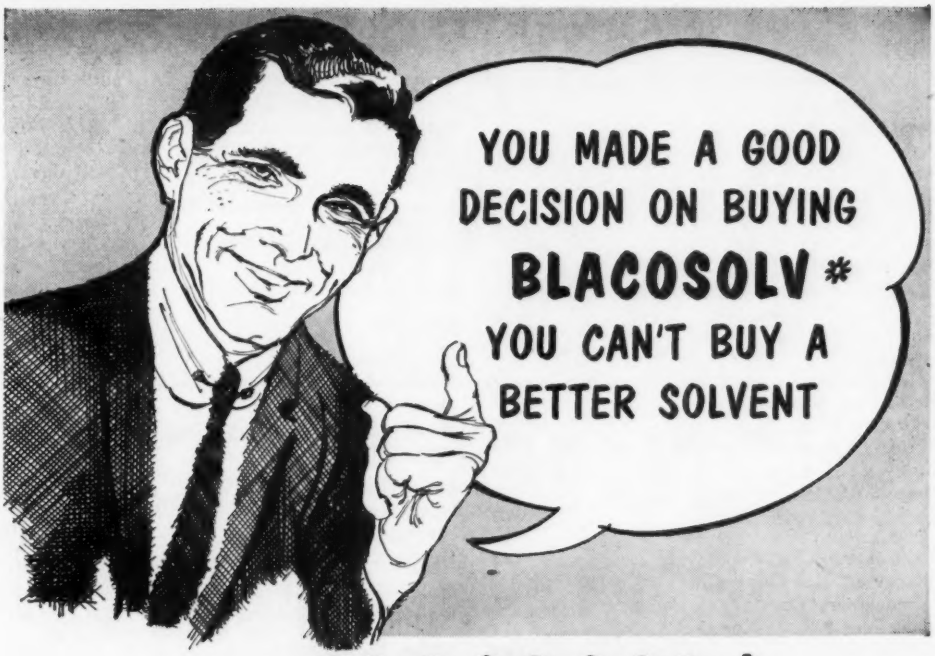
MEETINGS of INTEREST to FINISHERS

August 22. Stag Day, Detroit Branch, A. E. S., Detroit, Mich.

Sept. 7-10. 62nd Annual Convention, International Association of Electrotypers and Stereotypers, Inc., Biltmore Hotel, New York, N. Y.

The Finishing Touch

"You've got to hand it to him, though—he doesn't give up easily . . ."



USE BLACOSOLV®

Get the best possible solvent—plus invaluable professional advice!

When you buy Blacosolv you profit two ways. Blacosolv trichlorethylene assures better parts cleaning due to the entirely new and different stabilizers that prevent solvent breakdown and acid formations. Then too, you receive periodic visits from your representative, who offers you friendly, professional assistance whenever you require it.

Here's What One Manufacturer Wrote:

"When we contacted your representative he immediately visited our plant and helped us to correct the faulty operation of the machine. While this may be considered as part of his duties in your company, to us it meant a savings of dollars in lost time, and enabled us to immediately start production."

J. GRANDOLFI, ***Production Manager***
MALLORY BATTERY CO., North Tarrytown, N.Y.

*Blakeslee's brand of stabilized degreasing solvent

G. S. BLAKESLEE & CO. Dept 104-O
1844 So. Laramie
Chicago 50, Illinois

NEW YORK • LOS ANGELES • TORONTO

For more data circle 398 on Postpaid Card

JULY ADVERTISERS' INDEX

Abbey Process Automation, Inc. 77
Abbott Ball Co. 96
Acme Mfg. Co. 21
Agate Lacquer Mfg. Co. 157
Alchemize Corp. 117
Allied Chemical Corp., Solvay Process Div. . 51
Allied Research Products, Inc. 63, 79
Amchem Products, Inc. 33
American Brass Co. 8, 9
American Machine and Metals, Inc., DeBothezat Fans Div. 20
Atlas Powder Co., Chemicals Div. 14

Better Finishes & Coatings, Inc. 35
Binks Mfg. Co. 48, 49
Blakeslee & Co., G. S. 159
Bond Chemical Products Co. 115
Brady Co., W. H. 116
Branson Ultrasonic Corp. 107
Buckingham Products Co. 19

Central Machine Works 123
Cincinnati Cleaning & Finishing Machinery Co. 95
Cleveland Process Corp. 11
Clinton Co. 69
Cohn Mfg. Co., Inc., Sigmund 127
Cowles Chemical Co. 22
Cratex Mfg. Co. 103
Crescent Bronze Powder Co. 98

D & W Tool & Findings, Inc. 126
DeBothezat Fans Div., American Machine and Metals, Inc. 20
Detrex Chemical Industries, Inc. 97
Detroit Industrial Process Co. 145
DeVilbiss Co. 100, 101
Diversey Corp. 73
Dixon & Rippel, Inc. 143
Dow Chemical Co. 12, 13
Dry Clime Lamp Corp. 39
Du-Lite Chemical Corp. 106
Dytex Chemical Co. 102

Enthone, Inc. 4

Flexo Products Co. 76
Fortune Industries, Inc. 120
Fostoria Pressed Steel Corp. 59
Fusion Metal Coating Co. 133

G. S. Plastics Co. ..... Third Cover
Gardner Laboratory, Inc. 134
Gasway Corp. 3
Granco, Inc. 121
Gyromat, Inc. 45

Hammond Machinery Builders, Inc. 7
Hanson-Van Winkle-Munning Co. . Fourth Cover
Harshaw Chemical Co. 16, 17
Holland & Sons, Inc., J. 147
Hooker Chemical Corp. 75
Hull & Co., Inc., R. O. ..... Second Cover

Jelco Finishing Equipment Corp. 94

Kalamazoo Tank & Silo Co. 114
Kelite Corp. 10
Kushner Electroplating School 152

Lanly Co. 136

Mard Products, Inc. 125
Mechanical Process Co., Inc. 130
Metal & Thermit Corp. 118, 119
Miracle Paint Rejuvenator Co. 132
Morse Mfg. Co., Inc. 141

New Holland Machine Co. 68
North American Mogul Products Co. 70
Northwest Chemical Co. 67
Norton Co. 2

Oakite Products, Inc. 1
O'Neal Paint Products, Inc. 55

Parker Rust Proof Co. 61
Pennsalt Chemicals Corp. 37, 58
Pittsburgh Plate Glass Co. 80, 81

Rampe Mfg. Co. 99
Randolph Products Co. 122
Ransburg Electro-Coating Corp. 15
Reynolds Chemical Products Co. 41
Ronci Machine Co. 108

Sel-Rex Corp. 57
Sethco Mfg. Co. 110
Simplicity Engineering Co. 109
Solvay Process Div., Allied Chemical Corp. . . 51
Solvents Recovery Service, Inc. 150
Spee-Flo Co. 71
Spra-Con Co. 105
Spraying Systems Co. 78
Sprayon Products, Inc. 43
Stevens, Inc., Frederic B. 53
Stutz Co. 111
Sulphur Products Co., Inc. 148

Technic, Inc. 6
Tenax Finishing Products Co. 142
Ti-Co Industries, Inc. 144
Timesaver Sanders 18
True Brite Chemical Products Co. 124

Udylite Corp. 112, 113
Univertical Corporation 135

Vanton Pump & Equipment Corp. 131

Wyandotte Chemicals Corp. 47

GREATEST ADVANCE IN PLASTISOL SCIENCE

"Crash" program makes history! Completely new formulation concept develops surprise super-coating. New XL-12 Heat-Fusible Plastisol, laboratory and field-test proven to exceed all existing performance standards! Challenges comparison.

Beats Heat with Plenty to Spare. XL-12 bakes up to *8 hours, and more,* at 365-375° F. *No decomposition or color change on thin contacts.* Assures longer life.

Shrugs Off Plating Solutions! So completely impervious that in production using even *electroless Nickel, XL-12 shows no permeation or build-up after 6 months continuous service. Super-resistant to Aluminum Bright Dip!*

Twice as Tough for Double Service! XL-12 resists cutting and abrasion twice as effectively as the best you ever used before. Physical abuse which knocks out others, bounces off XL-12. Test it yourself.

Fabulous Results from Ordinary Curing! Use regular methods and equipment, yet XL-12 cures to tougher, smoother, more lustrous finish than any other plastisol. Won't deteriorate to dull or off-color appearance. Definitely minimizes drag-out to new low. Extends service life.

Other characteristics superior, too. Beats any you ever used, or are now using. Let it prove itself. Compatible with your present plastisol. Available in any color. Don't risk delay in getting your order out for *new XL-12.*

ORDER NOW

The G.S. Plastics Co.

15583 Brookpark Rd., Cleveland 35, Ohio

Telephone: CLearwater 2-4770

For more data circle 302 on Postpaid Card

FLEXIMATIC

IS THE ULTIMATE

IN LOW-COST PROCESSING CONVEYORS

It's the ultimate in low-cost flexibility because it can include Dial-A-Cycle, Select-A-Cycle, delayed set-down, advanced pick-up, vertical oscillation, automatic load-unload and other big-conveyor features. Each of these features can be added very quickly and easily.

The *Fleximatic* is a return type processing, electroplating or anodizing conveyor. The gross load for one carrier is forty pounds, work and rack. The rack size is a maximum of 18 inches in the direction of travel, 14 inches thick, and 36 inches long with a 9 inch hook. The machine requires a head room of 9 ft. 3 inches and floor space (width) 102 inches wide with 30 inch tanks. The length of the machine can vary to suit any particular application. The shipping dimensions of the machine are 8 ft. 2½ inches high by 7 ft. 6 inches wide. For short machines it will be possible to ship as one unit. The minimum immersion time of the *Fleximatic* is six seconds. You can see *Fleximatic* operating at Matawan. Hanson-Van Winkle-Munning Company, Matawan, New Jersey. Offices in principal cities.

H-VW-M

Progress in metalfinishing through advanced processes • equipment.

For more data circle 303 on Postpaid Card